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Address

SOME PROBLEMS OF PHARMACOPEIAL REVISION

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON PHARMACOLOGY AND THERAPEUTICS AT THE SIXTIETH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, 1909

REID HUNT, M.D.

Chief of the Division of Pharmacology, Hygienic Laboratory, U. S. Public Health and Marine-Hospital Service; Member of the Council on Pharmacy and Chemistry, American Medical Association

WASHINGTON, D. C.

In considering any phase of this subject, it should be remembered that never before have so many and in some respects such diverse interests been involved in the contents of the Pharmacopeia as at present. This has become the standard for importers of drugs, for manufacturers of not only the preparations used in medicine, but for all kinds of specialties, and proprietary medicines, chemicals, and flavoring extracts, for wholesale and retail druggists, and for officials engaged in the enforcement of pure food, drug, and pharmacy laws. It is assuming the character of a great commercial standard and a text-book of analytical chemistry combined, and has already expanded into a work very different from what its founders anticipated.

The purpose of a pharmacopeia and the parts the physician and pharmacist should take in its preparation was formulated as follows more than a hundred years ago by Drs. James Jackson and J. C. Warren in their report to the Massachusetts Medical Society:

> As it is the business of the physician to prescribe, and of the apothecary to prepare medicines, the physicians as a body ought to point out those articles of medicine which they shall ordinarily employ, and the standard preparations of them.[1]

In the course of time the positions have, in some respects, almost changed so that in recent years pharmacists have largely determined what shall go into the Pharmacopeia and are now inclined to criticize the physician, with much justice it must be admitted, for not adhering more closely to it. But in the extensive discussion of this subject the question of how far the Pharmacopeia meets the real present-day needs of the physician has not received much attention. This is the phase of the subject which physicians should be considering at the present time, and especial attention should be given to the means by which they can make their needs and wishes known; for the last few decades they have been very remiss in this respect.

With a large number of the problems involved in the revision of the Pharmacopeia, physicians have but little direct interest and are not qualified even to express an opinion; among these are many relating to chemical and pharmaceutical details. There is little danger that their interests in most of these cases will not be safeguarded in the future as they have been in the past.

There are, however, certain chemical problems in the solution of which medical opinion should prevail. Thus, many of the problems in regard to chloroform and ether, and the requirements as to the optical activity of a few drugs, such as scopolamin, are questions which chemists and pharmacists are not competent to decide. Whether the value of the fluidextract or the tinctures of nux vomica should be judged by the percentage of strychnin or by that of the total alkaloids is largely a medical problem. There is also an increasing demand for physiologically standardized drugs, and for a fuller recognition of antitoxins and vaccines. Unless some of these facts are fully taken into consideration in the revision of the Pharmacopeia, there will inevitably be, in the next few years, a rapid increase in that class of proprietary articles, already on the market, which, although pharmacopeial, are claimed, sometimes with truth, to be better standardized for the physician's use than the Pharmacopeia requires.

It is, however, in the question of the scope of the Pharmacopeia, what it shall and what it shall not contain, that the medical profession is most interested; and, considering the origin and real purpose of the work, physicians should have a very important, even the leading, part in its determination. In the present rapid evolution of the Pharmacopeia as a commercial standard there is danger that the very purpose for which the work was founded and for which it exists will be obscured. The medical profession will probably, sooner or later, insist that only those articles extensively used in the treatment or prevention of disease and the solvents, reagents, or other chemicals absolutely necessary for their preparation or testing, be admitted. There is a belief that some of the solvents and other reagents already contained in the body of the book should be transferred to the appendix or that, inasmuch as the Pharmacopeia never can be made entirely to supplant works on chemistry and other books of standards, some of the information at present given in considerable detail in it could be left for dispensatories, works on pharmacy and foods, encyclopedias, etc. Among the articles with somewhat elaborate descriptions which it has been suggested could be disposed of in some such manner are acetone, benzin, rubber, honey, ordinary water, sugar, several coloring and flavoring agents, as well as some crude drugs not employed as such in medicine. It is argued that if a number of such articles were either left to other standards or transferred to the appendix, with less elaborate descriptions, and if, furthermore, a number of admittedly rarely used drugs were dropped altogether, there would be space, without making the book unwieldy, for many of the

1. Wilbert, M. I.: The Coming Revision of the Pharmacopeia of the United States, THE JOURNAL A. M. A., Dec 15, 1906, xlvii, 1989.

more important new drugs. With a certain amount of elimination there would be time for the Committee on Revision to consider more fully the standards for really important articles, and it might be possible to complete the revision in a shorter time; the determination of standards for what are, for the physician, articles of minor importance (such as whisky) often requires as much time and work as does that for drugs which are of the utmost value, or more. Although it is very desirable, or necessary, to have commercial standards for many such articles, these could be provided for in works other than the Pharmacopeia; physicians must look elsewhere for standards for milk, starch-free flour and many other things of far more importance to them than most drugs.

Still, the question of eliminations is one which should be approached with much caution by the medical profession; that of additions, however, should receive its early and serious consideration. It is entirely unnecessary to point out why it is desirable that all non-secret drugs used by any considerable number of physicians should be included in the Pharmacopeia. Although it may be necessary, for the ultimate good, to exclude some of them for the present, it should not be forgotten the value of the work as a standard is lessened by every such drug excluded. The manner in which a drug is admitted (and especially the name under which it is admitted) is scarcely less important than the admission itself.

These considerations suggest three lines of inquiry which are especially pertinent at the present time: (1) what general classes of drugs, in more or less general use, are not at present in the Pharmacopeia? (2) by what means the more important of these can best be brought to the attention of the Committee on Revision; (3) what general considerations should govern the form and especially the nomenclature under which they are admitted?

In speaking of the drugs in somewhat general use by physicians it is, of course, necessary to exclude entirely from consideration those about which there is the least secrecy. The present condition as regards new drugs is more complex than any with which the Pharmacopeia has ever hitherto had to deal. Most of the drugs which have come into use in the last decade are either patented or have been introduced under proprietary names. To exclude entirely articles of these classes would be to make the Pharmacopeia still less representative of the actual needs of the physician; their inclusion, however, would involve very difficult problems. Many of the recently introduced drugs claimed by the manufacturers or their agents to be definite compounds have been found to be simply mixtures. In a great many other cases new names have been applied to more or less well-known chemical compounds; as a rule these names are objectionable not only because they are proprietary, but because they are frequently unscientific and often misleading.

Nevertheless, many valuable preparations have been introduced and have come into general use under such circumstances. This Association, through the Council on Pharmacy and Chemistry, has examined large numbers of the newer drugs and included in New and Nonofficial Remedies those which are believed to be as represented. Different sections of the Association and other medical organizations are selecting from this book those articles which the members believe to be of most value and which should be considered for inclusion in the Pharmacopeia. When these results and the prescription statistics now being collected by the American Pharmaceutical Association are tabulated and classified, the Committee on Revision will be better informed than at any other time in recent years as to the wishes of the medical profession concerning admissions. No committee desirous of making a Pharmacopeia which will receive the support of the profession could afford to neglect this material. Information collected in this way is a much truer indication of what should be included in the Pharmacopeia, if this is to fulfil the purposes for which it was founded, than would be the statistics of importers and manufacturers, for example, since there is no way of determining what part of the drugs which pass through the hands of the latter is for strictly medicinal and what for technical or purely commercial use. The Pharmacopeia should not become a standard for the latter.

Although, for the reasons already indicated, it may not be feasible to admit all the drugs selected by these medical organizations, the latter are, nevertheless, doing a useful service in calling attention to all the unofficial drugs which they believe to be useful.

The larger number of recently introduced drugs present no inherent difficulties, for the proprietorship applies only to the name. The articles themselves are free and the chief problem is one of nomenclature. Different pharmacopeias have pursued different policies in regard to this. Most have adopted the name under which the drug has become known in medical literature, provided the name has become free; otherwise they have as a rule adopted the true chemical name. Thus we find in most pharmacopeias such names as "phenacetin," "sulphonal," "saccharin," "antipyrin," etc. The United States Pharmacopeia, Eighth Revision, adopted in most cases the true chemical names, or, rather, abbreviations of them; these abbreviated names, however, will readily recall the true name to one somewhat familiar with chemistry. Thus in place of "phenacetin," we find acetphenetidin"; instead of "sulphonal," "sulphonmethane"; in place of "saccharin," "benzosulphinid" (but with "saccharin" as a synonym). The name "antipyrin," a name which in no wise suggests the chemical nature of the substance, has been adopted by the United States as well as by most foreign pharmacopeias; the German, however, has adopted the name "pyrazolonum phenyldimethylicum" and the British that of "phenazonum." There is a greater lack of uniformity in the case of many other names. Thus we find for the same substance "trionalum" in the Austrian and Swedish pharmacopeias, "methylsulphonal" in the German, "sulphonethylmethane" in the United States and the full chemical name "diethylsulphonmethylethylmethanum" in the Swiss. What was formerly official in our Pharmacopeia as "salol" has become "phenylis salicylas" in the eighth revision, while it is in the Swedish and Dutch pharmacopeias as "salicylas phenylicus," as "salolum" in the Swiss and "phenylum salicylicum" in the German, Austrian and Belgian, and so on.

In some cases this lack of uniformity in the naming of the same substance may be the almost inevitable result of differences in the laws of the various countries, but in most cases it is simply the result of each country trying to work out pharmacopeial problems independently. It is a survival of that provincialism in pharmacopeial matters which formerly found its expression in Boston having one and New York another pharmacopeia; or, up to recently, of Great Britain having the London, Dublin, and Edinburgh pharmacopeias. This atmosphere of provincialism pervades not only the nomenclature of new drugs, but that of the entire pharmacopeias, including the strengths of preparations as well as standards for purity, etc.

In marked contrast to this is the condition of the science of medicine as a whole, which the Pharmacopeia is supposed to serve; this has become truly international. Important medical discoveries soon become known throughout the civilized world; the leading medical journals of each country are read in all other countries. A new drug introduced in one country becomes known in a few weeks throughout the world; for a time, as a rule, but a single name is applied to it, and this enters into the permanent medical literature. Then after a few years the pharmacopeias of the various countries adopt, each for itself, a name; these names are often totally unlike, and the state of confusion which ensues is as great as that which occurs when different manufacturers apply different names to the same substance. Some of these specially devised pharmacopeial names may acquire a limited acceptance in their own countries, but they rarely enter the world's literature; most will probably remain literary curiosities. Thus, for instance, "phenazonum" and "pyrazolonum phenyldimethylicum," the British and German official names for antipyrin, do not occur up to the present in the *Index Medicus*.

Although sound arguments may be advanced for all of the new names recently introduced into the United States Pharmacopeia, including, for example, the very important one, that they are the true or close approximations to the true chemical names, and that really well-educated physicians should learn, even at the cost of a little effort, the true names of the drugs they use, yet there is little likelihood that some of them will ever come into general use.

The difficulties involved in making reforms in the present pharmacopeial nomenclature or of preventing confusion in the future are too great for any country to undertake alone successfully; the only possibility of success lies in a comprehensive international agreement. In these days of international congresses and conferences, when medical men from different nations come together to make, for example, international agreements concerning mortality statistics, or to formulate treaties concerning the control of contagious diseases—when botanists, zoologists, anatomists and chemists have established international systems of nomenclature in their sciences—why should not similar action be taken in regard to the Pharmacopeia? It is true that seven years ago there was a conference in Brussels for the unification of the formulas for a few heroic medicines; this was an important step, but unfortunately it has as yet not been followed by another.

Until the pharmacopeias of the world assume a more international character, corresponding to the present international character of medicine, they will fail more and more to represent truly the needs of the medical profession, and there is probably no phase of pharmacopeial revision in which this profession is more vitally interested than this.

That there has been a demand, largely from a commercial or pharmaceutical standpoint, for knowledge concerning foreign pharmacopeias is evidenced by the fact that a number of pharmacopeias have been translated into foreign languages. Thus, as I learned from Mr. Wilbert, the United States Pharmacopeia of 1840 was translated into German; editions of the German Pharmacopeia were translated into English and Spanish. The Japanese Pharmacopeia has been translated into both German and English. The eighth revision of the United States Pharmacopeia has just been translated into Spanish—an action which should aid materially in bringing about cooperation in pharmacopeial matters between the countries of the western hemisphere.

There are numerous other problems of pharmacopeia revision in which the physician is interested. One, for example, is whether the present basis of representation for medical organizations in the convention should not be changed so as to allow of a fuller participation by the different sections of this Association as well as of other organizations of specialists. Other problems would relate to the formation of a permanently active Committee or Commission on Revision, with centrally located headquarters, so that the Pharmacopeia could be revised at more frequent intervals; much of the work now done by the Council on Pharmacy and Chemistry could be done by such a commission. But time does not permit even a brief discussion of such questions.

Hygienic Laboratory, Twenty-fifth and E Streets, N. W.

Original Articles

THE RADICAL TREATMENT OF EPITHELIOMA OF THE LIP *

J. CLARK STEWART, M.D., B.S.
Professor of Principles of Surgery, University of Minnesota
MINNEAPOLIS

Operative treatment of cancer in any form or location must, in order to obtain the best possible results, be based on certain well-known incidents in the life-history of this form of neoplasm. Since cancer first disseminates by local extension and then usually by infection of the lymphatics before becoming generalized, any successful operative treatment must remove the whole probable field of local extension before the lymphatics are involved, or must include the latter in its scope before generalization has taken place. There being no clinical symptoms which point to the beginning of lymphatic infection, the only safe course is always to include the whole lymphatic system adjacent to any cancer in its operative removal.

Hence the ideal radical operation against cancer must include, first, extensive local removal of the tissues adjacent to the new growth; second, the removal of the associated lymph nodes with the lymph channels connecting them to the tumor; third, the avoidance of any cutting into the removed tissue, and, last, the closure of the operative wound so as to secure immediate union.

These principles have been embodied in the various operations against cancer in different parts of the body with strikingly successful results, but unfortunately have been disregarded by many operators.

In cancer of the breast there are certainly very few surgeons who will admit ever doing a simple amputation except for mere palliation, but I fear that there are still many operators who even during the past year have been guilty of this act of malpractice, and have thus probably condemned their unfortunate patients to a horrible death.

In cancer of the lip proper operative standards have been more slowly recognized even by the best among the profession, and it is only of late years that the necessity of a truly radical operation has been admitted. The reason for this is paradoxical. The argument seems to

* Read in the Section on Surgery of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

have been that because cancer of the lip is generally prickle-celled epithelioma, which is slower of growth locally, and even slower in its involvement of the lymphatics, and because on account of these facts some cures resulted from any form of local destruction of the tumor, therefore anything more than local removal or destruction was unnecessary. Because all the conditions were present which would ensure ideal results from radical treatment, the profession said, "What's the use?" and stuck to the old V operation and condemned at least 25 per cent. of the patients to recurrence and death.

Such an attitude among thinking men can be explained only by the facts that the percentages of nonrecurrence after the V operation compared quite favorably with those after more radical procedures in other regions, this being dependent entirely on the life-history of epithelioma with its late lymphatic involvement. Among another class of the profession scepticism as to the operative cure of cancer in general, ignorance of the exact facts, combined with the simplicity and ease of the V operation to an inexperienced or occasional operator,

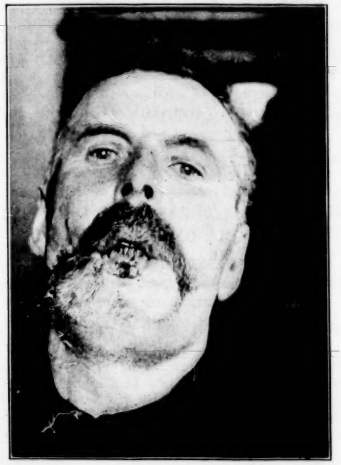

Fig. 1.—A case of typical local and lymphatic recurrence after the V operation.

Fig. 2.—Recurrence after V operation in man of 25, showing extreme malignancy at this age.

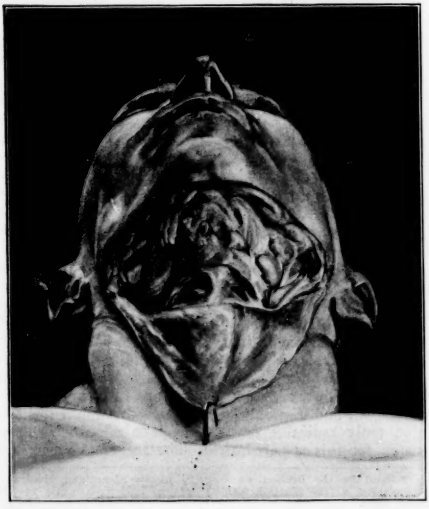

Fig. 3.—Operation for epithelioma of the lip. The preliminary and superficial dissection.

Fig. 4.—Complete dissection of lymphatic and submaxillary glands *en bloc*.

prevented radical treatment. Am I exaggerating when I estimate that nine-tenths of the cancers of the lip treated in this country in the past year have been subjected to purely local treatment of some kind? Am I mistaken in again estimating that not one-third of the members of this representative surgical body regularly do a radical operation in every early case of epithelioma of the lip

At our last meeting in this place I was discussing this question with a prominent member of this Section and he demurred strongly from my plea for radicalism, saying that my views were extreme. Another prominent surgeon said that he had always done the V operation and did not think that he had had 25 per cent. recurrence. Had the 25 per cent. no rights?

Our surgical text-books are a unit in not describing any radical operation for cancer of the lip, and only of late years have added to their description of the V operation the statement that "when the glands are involved they should be removed." Now this is certainly all wrong. No reasonable medical man can deny that the results of a radical operation must be far better than those of simple removal of the tumor, and that his pa-

Fig. 5.—Incisions on each side of a small growth, showing the fan-shaped mass of subcutaneous tissue which included lymphatics leading from tumor.

Fig. 6.—The method employed for the enlarging of the mouth by the utilization of a flap of mucous membrane together with the corrective triangle.

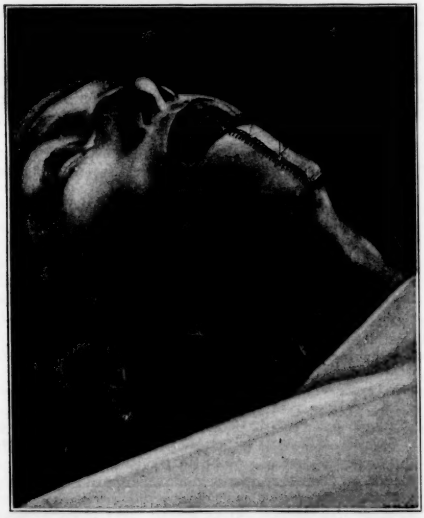

Fig. 7.—Suture of the wound with the provision for drainage of the submaxillary fossæ.

Fig. 8.—Result after removal of one inch of vermilion. Photograph taken immediately after removal of stitches.

tients are entitled to such better results. Certainly surgery against cancer should avail itself of every favorable field to improve its generally discouraging results. I believe thoroughly that every epithelioma of the lip, no matter how small or how apparently early it is seen, should be subjected to radical operation for its removal.

I am unable to give exact statistics in regard to the final results of radical operations for lip cancer, but I believe that recurrences will be less than 10 per cent., and most of these in reasonably early cases will be local and not in the neck, and thus admit of successful operation. I have never known of recurrence after any radical operation done by me in the past eleven years, although some cases are untraceable and may have recurred. Of the very large number of hopeless recurrences which I see, none have given a history of an early radical operation.

My plea is that our patients with cancer are entitled to the very best chance that surgical skill can afford them, and that a radical operation in lip cancer done before extensive lymphatic infection has occurred will have a very low recurrence rate and do much to increase public confidence in the operative cure for cancer.

The exact method and technic of the radical operation is not important as long as the principles already stated are observed, and a number of differing methods are in use by various surgeons, all of which attain the desired results. The operation which I have used for about eleven years is shown in Figures 3 to 7. (These drawings are from the cadaver, the subject fortunately having enlarged lymph nodes from unknown causes. The beauty of the drawings is due to the skill of Mr. Wilson, artist to the anatomic department of the University of Minnesota.) It avoids mouth infection of the neck wound by completing all dissection of the neck before entering the mouth. The first incision extends just below the jaw from one angle to the other and cuts the skin and the platysma muscle, which are then carefully dissected down to the level of the thyroid cartilage. All tissues down to the muscles are then sectioned at this line and a clean dissection is made elevating all loose connective tissue, lymph nodes, etc., in a flap which extends laterally to the great vessels on each side. The facial artery and vein are ligated and the submaxillary glands are loosened and raised in the flap on each side. Incisions are now made at each side of the epithelioma far enough away to include all infiltrated tissue, and these are carried down to the cross section already made. The lateral flaps are now dissected free from the jaw, keeping close to the skin at the lower part to avoid lymphatics, and finally the intervening central mass is loosened from the jaw and removed. This contains the tumor and a fan-shaped mass of skin and the deeper tissues attached to the lymph nodes of the neck, and the submaxillary gland by a loose flap of tissue which contains the connecting lymphatics.

The submaxillary glands should always be removed, not because they are infected in early cases, but because there is regularly a lymph node attached to each which is one of the first to be involved. In cases in which not over three-fourths of an inch of the vermilion edge of the lip has been removed, simple suture of the wound with drainage of the submaxillary fossæ completes the operation. In cases in which the mouth must be extended on account of more extensive removal of the lower lip, the procedure shown in the drawings is convenient. The mouth is broadened by a straight incision outward at either or both angles, and this incision is carried down to but not through the mucous membrane; stitched to the raw surface of the new lip. To avoid the latter is then cut one-half an inch higher and puckering of the upper lip a triangle of skin is taken out of the cheek to allow of the smooth drawing together of the lower lip. The new chin should be sutured to the soft tissues over the lower jaw to exclude mouth fluids from the neck wound. This sometimes fails and there is an offensive suppuration in the wound; and the same accident may occur with a closed mouth, apparently from infection by mouth germs through the cut duct of the submaxillary gland. Final union is always good, and cosmetic results remarkable considering the amount of lower lip often removed. There should be no mortality after this operation, except from accidents due to anesthesia, embolism, etc.

The same operation can be adapted to cases recurrent after V operations or caustic, and when thoroughly done will avoid in many cases further neck involvement.

In these late cases subsequent recurrence is apt to be local, and while it is often entirely inoperable the patient is saved much of the extreme suffering incurred by those dying from lymph node involvement.

I have never seen occasion to attack the lymph nodes along the great vessels as advised by Crile, as the observed cases extending to this field have also had such extensive local involvement as to preclude operation.

There are a few rare cases of cancer of the lip which negate the comparative chronicity of this disease. Such cases are either epithelioma in very young subjects, or carcinoma proper in men up to forty. All such cases personally observed have recurred after V operations or caustic. No opportunity has been afforded to observe the effect of a proper radical operation in such cases.

SUMMARY

1. Local removal of lip cancer should never be done because it is impossible to exclude lymphatic involvement in any case.

2. Radical operation embodying the principles laid down is the only sure way to obtain the best results for our patients, our own reputations, and the credit of the surgical treatment of cancer.

3. Even in recurrent cases much can be done, and these patients should, when the extensive involvement of irremovable soft parts does not preclude, be given the benefit of a carefully executed operation on the same lines.

704 Pillsbury Building.

RADICAL OPERATION IN MAMMARY CANCER *

J. N. JACKSON, M.D.
KANSAS CITY, MO.

In December, 1905, I presented to the Western Surgical and Gynecological Association a new technic for breast amputation in mammary cancer.[1] This technic, after having been previously worked out in the dissecting-room, was first employed clinically in May, 1905. My personal experience, therefore, at the time of its presentation to the surgical public, was limited to but eight cases. In the three years and a half intervening my experience has been increased by a considerable number of further cases in which I have put the method

* Read in the Section on Surgery of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. THE JOURNAL A. M. A., March 3, 1906, xlvi, 627.

to the fullest possible tests. My own experience has been supplemented by the voluntary testimonials of a very large number of surgeons all over the country. Particularly do I wish to express my indebtedness to Dr. Charles Mayo, whose very kindly endorsement and employment of the technic in his wonderful surgical clinic has introduced the method by demonstration to so many surgeons. My added experience, together with these contributions, has led me to believe it possibly worth while to present this technic again to the surgical profession for further consideration, embodying some modifications of slight character which add to its virtue, and accompanied by a revised set of drawings rather more accurate than the original.

Before proceeding with the operation itself I find it a great advantage first to mark off with a slight scratch stroke of the knife the complete plan of skin incision. This ensures greater certainty in the artistic accuracy of the plastic result, and at the same time warns one against encroachment on dangerous infected tissue in the stress of operative work. I would emphasize at the outset that the portion of the incision which surrounds the breast is always carried beyond the bounds of the

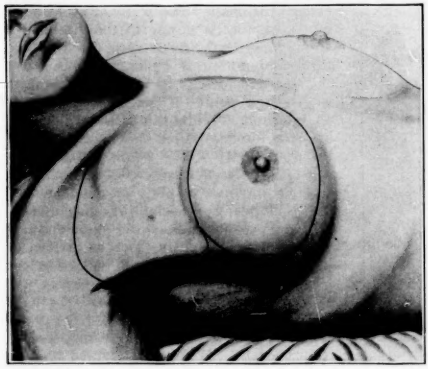

Fig. 1.—Outline of incision, marked with a scratch stroke of the knife. (These drawings are by A. S. Cleaveland.)

breast itself so that all premammary skin is removed with the tumor.

The skin incision is begun at a point about one and a half inches below the middle of the clavicle in the natural depression marking the interval between the clavicular origins of the deltoid and pectoralis major muscles. Since to this point in later closure the skin from the floor of the axilla must be brought it can be accurately estimated in advance by pressing the index-finger up beneath the pectoralis major muscle in the axilla and feeling the point in front to which it will reach without undue tension.

From this initial point the incision is carried outward and downward with a slight curvature whose convexity is outward, overlapping the inner margin of the deltoid muscle, to the outer edge of the lower border of the pectoral fold. (I have found that when desired to increase the breadth of the flap, as in cases in which the growth is quite in the outer circumference of the breast, this incision can be carried from two to three fingers' breadth beyond the margin of the deltoid, and yet with the great laxity of the axillary skin the closure on this line is effected with practically no tension.) The incision is now curved around the outer edge of the pectoralis insertion and reaches slightly under the edge of the pectoral fold. Along the under margin of this fold it is carried to the chest wall, where it meets the outer circumference of the breast near its lower border. The re-

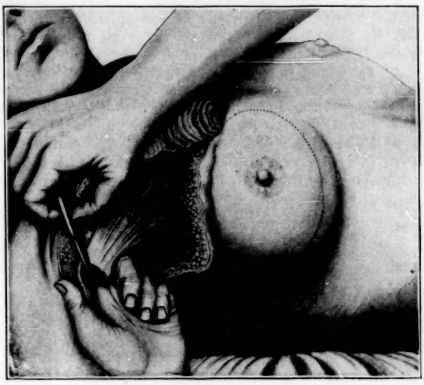

Fig. 2.—Exposure and division of the pectoralis major.

maining portion of the incision is made in the form of an ellipse about the breast with its long axis somewhat from above downward and outward, so the outer portion of its circumference practically parallels the descending first incision. In operating, this ascending portion alone is made at the beginning of the operation.

With the incision thus far carried I have fashioned a quadrilateral flap with its base upward toward the clavicle and free below. This incision is carried through skin and superficial fascia down to the underlying muscles. This flap is now dissected upward from below,

Fig. 3.—Isolation and division of the pectoralis minor.

and above its base the skin is undermined well up to the clavicle. The flap is then rolled up in a large gauze pad wrung out of hot salt solution to protect it from possible contamination or implantation of cancer cells in the subsequent stages of the operation. With this flap lifted the pectoralis major muscle is exposed with its fibers

converging to its tendinous insertion in the humerus. The index-finger of one hand is now shoved up underneath the pectoralis major muscle and brought out again at its upper border, so that the entire pectoralis muscle is thus hooked up on the index-finger, and by blunt dissection separated out to its tendinous insertion.

If one wishes to leave the clavicular portion of the pectoralis muscle, this can easily be accomplished by bringing the finger up through the interval, usually well marked, between the clavicular and sternal portions of the muscle, and thus the clavicular portion can be separated and left in place. With the tendon of the pectoralis muscle thus lifted up, as shown in Figure 2, it is now divided by the scalpel very close to its insertion into the humerus. The muscle immediately retracts toward the chest and exposes, underneath, the pectoralis minor muscle invested in its fascia, which above runs to the clavicle and below spreads out over the chest walls.

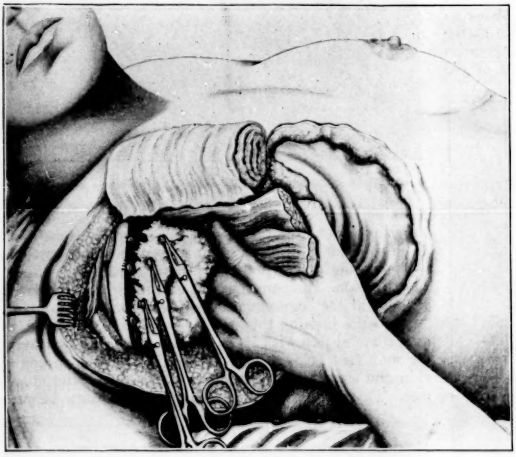

Fig. 4.—Dissection up under the breast and toward the chest.

This can easily be exposed by blunt dissection by the finger, which is now likewise inserted under the fibers of this muscle, and it is isolated as was the pectoralis major. It is also divided (Fig. 3) close to its attachment to the coracoid process of the scapula. As the pectoralis minor, like the pectoralis major, retracts toward the chest, the wound is held apart by retractors or by the fingers of an assistant, and the axillary space is now widely exposed to view from the front. As a rule this exposure can be made without encountering any bleeding vessels which will require clamp or ligature. Likewise we now have a wide exposure of the axilla for thorough dissection, without in any way having touched the breast or made any extensive division of tissues.

The axillary vein is now in view, and to its outer side, and parallel to it, an incision is made with the scissors of the fascia which surrounds the vessels. The fascia is now stripped off, usually by blunt dissection and gauze, supplemented by an occasional snipping with scissors. The operator works steadily from without and above downward and inward toward the chest, and clearing fascia, glands, etc., as he goes. In this way the axillary vein and artery are isolated, and the branches supplying the axilla and going on to the chest are made plainly apparent. These vessels are at once double-clamped and divided between clamps. I have usually found it necessary thus to ligate about three or four sets of vessels. Time is saved by immediately ligating these vessels and then removing the clamps. Thereafter there will be no trouble with hemorrhage from the axilla, except occasionally from little veins in the cellular tissue further back toward the scapula or toward the chest. These incidental vessels, as a rule, will not be more than three or four in number and are usually ligated immediately after clamping. Beginning thus at the apex and outer border of the axilla, the fascia and glands are completely cleared by gauze and scissors dissection, working from the vessels inward toward the chest. This dissection should clear the subscapular, serratus magnus and intercostal muscles of all connective tissue and fat cells. As the dissection proceeds the raw surfaces left are covered progressively with hot salt packs both on the proximal and distal wound surfaces, thus carefully guarding against wound contamination. The dissection is now continued usually with gauze, up underneath the pectoralis muscles under the breast and toward the chest. The point of attachment of the pectoralis minor to the ribs is cut from underneath, flush with the ribs and the costal muscles. From underneath the operator now loosens up the pectoralis major to its fixed points of origin from clavicle and sternum. While this is being done the breast is forcibly pulled back so as to expose the deep cavity of the wound. The pectoralis muscle is now severed from beneath, close to its lines of bony attachment, and the perforating branches of the internal mammary which supply the vascularity of the breast are caught as soon as divided as they come through the chest wall (Fig. 5). Usually two or three of these vessels will spurt, but they can be immediately caught with forceps and later tied. After the pectoralis major muscle has been entirely severed from beneath, the breast is allowed to drop back into its normal position, the skin incision is completed, dissected widely in every direction, and the breast and the pectoral muscles underneath are finally clearly removed. Branches of the mammary artery which are clamped are now tied and the forceps removed.

Under these circumstances the skin incision practically does not bleed at all, and it will be noticed that at no time during the operation were there more than a dozen clamps on the wound. As a matter of fact, the operation could easily be completed with from one-half dozen to one dozen clamps at the outside. This is made possible by the fact that all vessels are ligated as trunks at their points of origin, instead of dealing with a large number of peripheral branches, as is usual in other operations. The extent of fascia dissected in this operation is the same as in any other thoroughly radical breast amputation. If one wishes to increase the extent of radical removal in accordance with the suggestion of Handley, as we now generally do, this can readily be accomplished by adding a vertical incision from the lowest point of that circumscribing the breast. From this vertical incision the skin and superficial fascia are dissected in all directions, and the deep fascia over the rectus, external oblique, and latissimus dorsi, bounded

by the midline internally, the latissimus externally, and a line on the level of the umbilicus below, are removed *en bloc*, together with the glands, breast, etc., embraced in the usual Halstead technic.

The removal of infected tissue now being complete and the wound dry, the next step is the replacing of the flap and the closure of the wound, these also presenting points of distinct originality. The quadrilateral flap of skin and superficial fascia which originally formed the anterior covering of the axilla are now stretched out by tenaculum forceps and transferred inward to cover the defect of the chest wall created by the removal of the skin of the breast (Fig. 6). This flap, which is one of the distinctive features of the operation, will always contract after it has been entirely loosened and will look as though it could be of but little service. A couple of tenaculum forceps at the angles, with probably another pair on either side, will spread it out until it covers a surprising amount of space.

As the flap is now drawn over on to the chest, I usually fix it by attachment to the corresponding points of skin margin, as shown in Figures 6 and 7. Another distinctive point now consists in catching up, with the tenaculum, the margin of the lower portion of the pectoral fold, which represents the integument which formed the original floor of the axilla. The tenaculum on this margin is placed at such a distance from the lowest point of the first vertical line that when drawn upward it will bring this skin point up to the original beginning of the first incision beneath the clavicle. This maneuver brings the loose skin from the floor of the axilla closely up around the axillary vessels and does away entirely with the axilla as a cavity in the subsequent anatomy of the individual. These tenacula likewise are usually clamped and mark these fixed points of coaptation, as seen in Figure 7.

I now place figure-of-eight tension-approximation sutures of silkworm gut at these points to steady our subsequent suturing. These figure-of-eight tension-approximation sutures were first introduced to me by Dr. Charles Mayo and are admirable for such purposes. The remaining portion of the incision may be closed either with interrupted or continuous sutures, as desired; or, as I have frequently done, by the use of subcuticular sutures of silkworm gut. It is most surprising, after this flap has been spread out and approximation properly made, how little tension there will be on the suture line. Should the skin show any pallor suggestive of tension, a number of superficial short incisions through skin alone are made paralleling the wound on flap and outside, allowing escape of venous oozing and thus preventing that venous stasis which more than any other cause may be responsible for gangrene of skin or flap. A stab puncture in the lowest recesses of the wound space behind furnishes opportunity for drainage. In many cases I dispense with drainage entirely.

The wound is now covered by large square pads of gauze wrung dry out of hot salt solution, and finally strapped tightly. Separate gauze pads cover the arm portion of the wound and are strapped separately so as to permit free mobility of the arm unrestrained by fixation to the chest. The moist gauze starts capillarity as dry would not, so that the oozing blood and serum are at once taken up by the gauze and carried to the superficial layers. The wound surface is thus kept dry and clean. The strapping also holds the flap close to the chest and obliterates dead spaces.

When the operation is completed (Fig. 8) it will be observed that there is an appearance which has been likened to that of a dipper, with its handle running vertically along the inner border of the arm, paralleling the deltoid, the bowl of the cup being represented by three lines, each at right angles to the other, on the chest wall. There is thus no opportunity for linear contraction interfering with the function or utility of the arm.

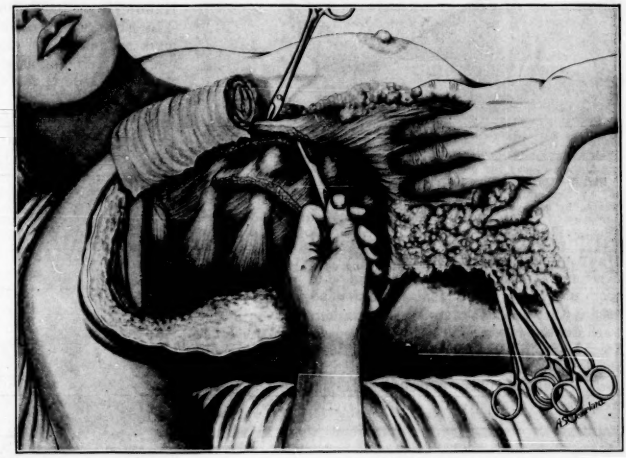

Fig. 5.—Pectoralis muscle severed from beneath, and perforating branch of the internal mammary caught with forceps.

This operation will be much better understood by reference to the illustrations which are presented herewith, and its advantages will be much more appreciated on practical trial.

In conclusion, I believe that this method has the following advantages:

1. The drawing of the skin from the floor of the axilla up to the arm does away with the axillary fossa, and thus with the large space which Nature would have to obliterate by formation of scar tissue, with the resultant pressure on the axillary vessels and nerves. In fact, it was in the endeavor to produce this result that the flap was incidentally developed. I had been impressed, as doubtless has every surgeon, with the difficulty in managing the empty fossa axillaris left behind in the older operations. On thin subjects in whom the axillary fat disappears, I had often been impressed with the fact that the pectoral muscle was covered behind as well as in front by skin, and that there was here practically no subcutaneous axillary space. On fleshy patients even it

is easy to push the skin of the axillary floor well up beneath the clavicle. It thus appeared that with a vertical skin incision in front and the skin from the axilla behind brought forward to meet it, I would closely surround the axillary vessels with no waste space for drainage or extensive fibrous tissue obliteration. When this

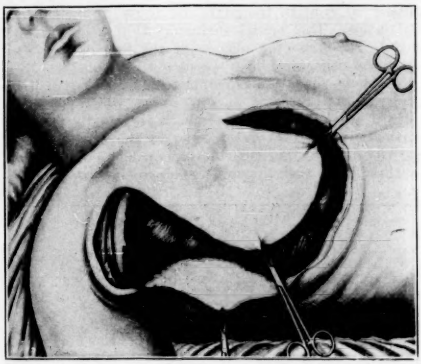

Fig. 6.—Quadrilateral flap of skin and superficial fascia stretched out by tenaculum forceps and transferred inward to cover defect created by removal of skin of breast.

was tried on the cadaver and the axillary skin was drawn up to meet the outer side of my vertical incision in front I found that the original skin covering the pectoralis major muscle at its outer portion was not needed there. Then came the suggestion to slide it inward to the chest where it was needed, and thus the flap. I am, therefore, of the opinion that this method of obliterating the axillary space is possibly the most important point in my entire technic. Its significance, however, has been apparently entirely overlooked by many

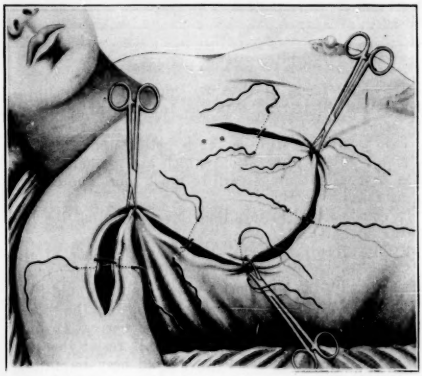

Fig. 7.—Method of insertion of figure-of-eight coaptation sutures.

whose attention has been attracted only by the more obvious and picturesque flap. I have seen not a single case of edema of the arm in my patients since using this technic and none of pain in the distribution of the axillary nerves. Furthermore, there is no possibility of any contraction of skin, which fixes the arm to the chest, and the early and complete restoration of the function of the arm is striking. I therefore put no restraining bandage or splint on the arm at all, but from the outset have it carried simply in a sling and encourage use of the hand and arm as much as possible from the beginning.

2. The flap forms a covering for the chest defect, as a rule without any tension, and this almost entirely obviates the necessity of grafting, which is so frequent in other methods. In fact, I have not found any patient operated on by my method who required grafting. It is a curious thing to me to observe that some men seem on general principles to object to any plastic attempt to close a breast wound. Their argument is based on the presumption that in an effort to secure primary closure thoroughness of excision is sacrificed. In my method the entire breast skin is removed. Can any more be required? Handley's argument would even indicate that much less skin sacrifice is necessary. There is certainly no pathologic argument for more. On the other hand, I have found myself and observed others removing more skin than ever before, for the simple reason that it can be

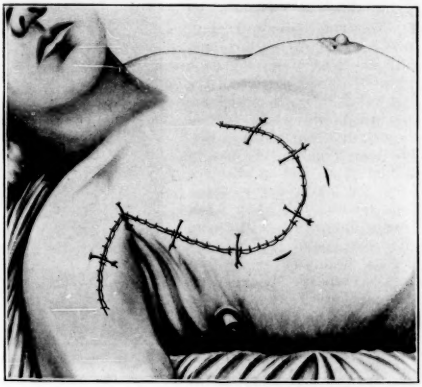

Fig. 8.—Flap sutured in place, with drainage-tube inserted.

removed, and yet the resultant defect can be covered by this flap without the necessity of grafting. I have even removed and seen removed by my surgical colleague in secondary operations on patients previously operated on by others, areas of skin five inches in diameter, and yet covered with primary union by this method and this in cases in which the primary operation had sacrificed at least an ordinary amount of skin. I certainly would not argue any compromise with completeness and thoroughness of removal of infected tissue in cancer cases. There doubtless will be found isolated cases in which neither this or any other one certain method may be applicable, but I do believe that it will prove a distinct advantage in over 95 per cent. of all cases, if operable at all.

Again, Dr. Rodman, in his excellent monograph on "Cancer of the Breast," while most kindly portraying my method in full, has mildly attributed to it two cases of skin recurrence in his hands. In answer to this I would simply remark that in no technic as yet suggested, not excepting the extremely radical one of Dr. Rodman himself, is the skin sacrificed from which my flap is

obtained. No one has removed the skin of the original axillary fold. Skin recurrences will occasionally occur after any cancer operation. I have thus far seen but two apparent skin recurrences. In one, reoperation proved it to have really begun in the intercostal fascia and the skin became secondarily involved by contact. Furthermore, while the assumption is not susceptible of exact proof, I am deeply impressed with the view that many of my cases of local recurrence are really cases of implantation recurrence, or local cancer grafts from cancer cells which escaped from cancer tissue during operation, and, becoming implanted in the healthy tissues of a patient susceptible to cancer and obtaining therefrom necessary nutrition and environment, have reproduced themselves. With this belief I strongly urge the painstaking protection of the wound surfaces remaining from the possible implantation of cancer cells, as was indicated in my description of my technic. With this same object I thoroughly flush out and mechanically cleanse all my wounds in cancer cases before closure —the only wounds I do irrigate.

3. The ligation of all vessels at their nearest point of origin does away with the use of a large number of hemostatic forceps, which cause loss of time, to say nothing of the inconvenience of having a large number of instruments in one's way. I have in few instances used more than one dozen forceps in this operation, and can usually do the work with about six. The operation is thus shortened, so that, as a rule, I find that it requires from forty minutes to one hour or thereabouts to complete it. In fact, I have never run beyond an hour, even doing the operation slowly, as I have in most cases, for the purpose of demonstrating this new technic, and I have done the operation in forty minutes.

The most noticeable feature to the onlooker, when the operation is done in the manner described, probably is the marked absence of hemorrhage, so that it can almost be called a bloodless operation.

4. The entire technical portion of the operation is completed before the chest is exposed by removal of the breast; therefore, long exposure of an enormous area of raw chest surface, with the attendant shock, is done away with. As soon, in fact, as the breast is removed the wound is ready to be closed.

425 Argyle Building.

ABSTRACT OF DISCUSSION

ON PAPERS BY DRS. STEWART AND JACKSON

DR. H. S. WIEDER, Philadelphia: I believe that the work of Handley on the breast and that of Watson-Cheyne have shown that there is local permeation of the cancer downward to the chin in a radial direction and outward toward the borders of the lip, and that, therefore, the V-shaped operation is absolutely contraindicated. If the surgeon is going to take out a V he should turn it in the opposite direction, the base of the V being down and not up. In practically all cases the V-shaped operation is contraindicated unless it includes the radical removal of all the glands in the neck. Like Dr. Stewart, I have never found the submaxillary glands to be involved, but they should be removed, nevertheless, because we frequently find imbedded within these glands small lymph glands which may become carcinomatous, but which cannot be detected by sight or touch.

The early diagnosis of carcinoma does not depend on the diagnosis of the tumor itself, but the detection of abnormal involution, which is the key to the whole situation. As Warren and others have pointed out, in the proliferative type of abnormal involution we have an excessively high percentage of cases of malignant degeneration. It is to this type of abnormal involution that we must devote particular attention, and the microscopist must examine his gross specimen in all directions carefully until he finds slightly indurated portions and these he must examine most painstakingly. In making frozen sections one cannot examine all parts of the tissue, but only a small portion, so that five minutes spent in searching for suspicious portions is five minutes well spent, often avoiding the necessity for a secondary operation. It is a good practice when making general physical examinations of female patients to examine the breasts carefully and by so doing you will be surprised at the number of cases in which you will detect unsuspected abnormal involution. These are the cases which must be watched in order to detect carinoma in its very earliest stages.

DR. W. H. WELCH, Baltimore: I think that pathologists nowadays have more to learn from the surgeon than they can teach him. I think that there is nothing much more remarkable than the contributions which have been made to surgery by the observations on living human beings as contrasted with those to which we are limited, as a rule, on dead material. Pathologists, I think, are much impressed with the risks of cutting out fragments of tumors for microscopic diagnosis. I have received not a few specimens of this character, small pieces of tissue which have been cut off from growths and are said to be for diagnosis. All that material comes from a distance, and I never have any opportunity of examining such pieces of tissue in Baltimore at our hospitals. In this excision there is a great risk of tumor cells being transplanted. In my opinion the cases about which there is doubt in the opinion of the pathologist, as a rule, are not malignant. My experience has been that if a case is one of true malignancy there is not much difficulty in the diagnosis, and I am rather impressed with the view that on the whole the errors are made on the other side, of making a diagnosis of malignancy when it is not justified by the findings. It is of the utmost importance that the pathologist familiarize himself with all the deviations that can occur in normal material within the physiologic limits. In the uterus, particularly, there is a very wide range of deviation from the normal in the utricular glands, which is not, however, in any way significant of malignancy. In the breast, too, there are not a few deviations from the normal which have no significance at all so far as tendency to malignancy is concerned. I would urge all who make these examinations that they acquaint themselves with these deviations from the normal within physiologic limits and also with those conditions which in any way indicate any tendency toward a malignant growth. I think that this is worth emphasizing.

Then, again, the diagnoses which surgeons receive from pathologists in whom they have confidence are often misinterpreted—small matters of misinterpretation of the growth or of nomenclature. When specimens are sent me for diagnosis that have been diagnosed wrongly I generally point out that good pathologists may differ in their nomenclature, and one man may choose to call a specimen an endothelioma that I might prefer to call a carcinoma. That is a matter of difference of opinion entirely, and I would not consider that as an accusation against the value of a microscopic diagnosis in these cases.

DR. W. W. GRANT, Denver: In a paper presented before this section in regard to the radical operation for epithelioma of the mouth or either lip in 1903-4, which was my second contribution to this subject, I spoke of a new method of operating which I know has been adopted by many of the best surgeons of the country who have made themselves familiar with it and prefer it to the older methods of operating. No surgeon who is familiar with the progress of surgery in reference to malignant disease of the lip will to-day use the old V-shaped method, unless, as stated in my paper, the mouth of the patient is very large and the growth very small. I have found that it is infinitely better to take the flap from the cheek and this operation is well illustrated in the latest edition of Dr. Da Costa's work on surgery. I find that it is infinitely better never to take a flap from the chin or the front of the neck.

One thing which has been overlooked by many surgeons is this: One surgeon said to me that he had improved my operation by making incisions from the corners of the mouth if the lip is totally removed. I told him that in this operation as originally described he would find that this was fully and

abundantly described so that the mucous membrane would cover the lips entirely and not a single raw surface be left to heal by granulation.

I always remove the glands in the submental triangle and under the jaw whether seemingly involved or not. I always insert a little T-drain (through the submental space) so that the wounds will heal rapidly without soiling. The parts, too, are so vascular that the cutting of large vessels need not be feared. There is never any destruction from sloughing. Dr. Jackson's operation is a beautiful one. I have used it for some time, but all surgeons know that in any radical operation for carcinoma of the breast it is impossible to apply any one method to all cases. In other words, the surgeon is called on and must be ready to apply any modification of an operation in any case of this kind. He must adapt the operation to suit the case and not the case to the operation.

DR. GEORGE W. GUTHRIE, Wilkesbarre, Pa.: I agree that ordinarily the radical operation on the lip is justifiable and consistent with good surgery. Occasionally, however, there are exceptional cases—for example, if the patient be an old man. I happened to have such a case five years ago, the patient was 84 years of age, with a small ulcer of the lip, of comparatively recent origin. Here I did a V-shaped operation under local anesthesia. The man lived over four years without recurrence and died from some intercurrent affection. In exceptional cases in which the mouth is large or the ulcer small and the patient old and decrepit, the V-shaped operation is justifiable.

I learned the Jackson flap method for operations on the breast from Dr. C. H. Mayo and I have used it with gratifying results. Before that I did the Halsted operation, but since using the Jackson method my results have been very gratifying. I have been spared the hard contracted cicatrix and the patient has had a useful arm.

DR. E. S. JUDD, Rochester, Minn.: I want to commend the Jackson operation in cancer of the breast. Almost since Dr. Jackson's early work, after he had done but two of these operations he came to Rochester and demonstrated the technic to us, and ever since that time we have followed it almost to the letter. We believe, however, that one or two modifications which we have made make the operation more simple. Instead of removing the entire pectoralis major muscle we save the upper third, which has a separate blood and nerve supply, so that this portion will functionate as a separate muscle and we get earlier and better use of the arm. At the same time, we do not make the operation any the less radical because the axilla can be exposed just as well with the upper third of the pectoralis major muscle *in situ* as when it is removed. Another point is in the removal of the pectoralis minor muscle. We sever that in the middle and then save the upper half by attaching a number of hemostats to the cut surface and then turn the piece of muscle up over the pectoralis major and use it as a retractor while cleaning out the axilla. We use the Jackson flap incision almost entirely and have often been spared the necessity of skin grafting, and the obliteration of the axillary fold seemed very important. As yet we have not closed the wounds without drainage, but have always drained through two separate points.

In cancer of the lip we agree with Dr. Guthrie in not removing the glands or in doing a very radical operation in very old men who have a very small and a recent epithelioma of the lip, but that would be the only instance in which we would not remove the lymphatics just as early as we remove the axillary glands in cancer of the breast. We would always remove the submaxillary salivary glands simply to make the operation more radical because we do not feel that we can remove all the lymphatics without removing the salivary glands.

DR. MILES F. PORTER, Fort Wayne, Ind.: Regarding carcinoma of the lip, most of us will agree to the composite picture that has been given us by Dr. Stewart and by Drs. Guthrie and Judd. What we are to do with these cases of carcinoma of the breast without tumors? That is: What shall be the method of procedure in a woman of carcinoma age who consults us without a demonstrable tumor, but with a bloody discharge from the breast and the complaint that she has a little pain? This is a serious question with me and I am not sure but that the safest thing to do in these cases would be to do what we do in the cases that present small tumors, namely, take the breast out and have it examined and if it is found to be malignant then do a radical operation. In operation for tumors of the breast it seems to me that the details of no particular technic are so important as are certain principles which should govern us in all operations. In the first place, the removal should be complete, whether one method or another is adopted; second, the operation should not leave the patient crippled, with an arm that she cannot use; and, third, the operation should be done with the least possible degree of shock. Furthermore, there should be relatively no hemorrhage. We accomplish this latter, and that, it seems to me, is one of the most important things in Jackson's technic, by securing the vessels at their origin, and I can confirm his assertion that by doing this operation is practically a bloodless one. My objection to the Jackson operation as it was originally described—and I see that it has been changed materially—was that it left sharp angles in the flap. Sharp angles wherever they occur have a tendency to slough. Now Dr. Jackson has done away with these angles. He has done another thing in the way of applying one of the principles referred to above and that is he puts the flap in close apposition to the hinge in order that the hinge may be free to move. He says that he has avoided the lack of motion which follows so many of these operations. I am impressed with the drawing up of the flap and making it hug the joint. Formerly two or three subcuticular sutures were inserted to hold the axillary tissues and skin in close apposition to the shoulder joint. There is no inhibition in the subsequent movement of the arm. In other words, the securing of the vessels at their origin, the avoidance of angles and the removal of all the diseased tissues are the chief advantages of this operation.

I want to emphasize Dr. Jackson's remark regarding the necessity of skin-grafting. I do not believe that there is one case in twenty that requires skin-grafting, if certain principles are followed in the way of undermining the flaps and in the location of the incisions. In these cases it is not necessary to make an inefficient operation by removing less skin than should be removed if we will plan our incisions and extend the undermining as it should be in order to get proper coaptation. I have sought to do away with drainage. I believe that in the vast majority of cases drainage is entirely unnecessary.

DR. JOHN F. BINNIE, Kansas City, Mo.: In epithelioma of the lip and carcinoma of the breast is a principle underlying both operations and a difference between the two operations required. Every tissue in the body almost seems to adapt itself to a certain extent to its duties. Epithelium which has to do with filth and insults, for example, the epithelium of the tongue and lip and more especially the lymphatics which drain that epithelium become modified so that irritants which would otherwise cause an immense amount of trouble become practically harmless. The tubes leading from that epithelium to the lymph nodes or filters next in order become impervious to a large extent to the poison passing through them. In these cases one need only excise with moderate thoroughness the local disease, because local recurrence is very uncommon. Then remove the lymph nodes next in order which are affected; then the lymph nodes apparently not affected and there is good prospect for recovery. There is no need to pay any attention to the lymph vessels leading from the primary disease to the nodes. How different in the case of the breast! The breast must be excised most thoroughly; every lymph node, all the accessible fat, the lymphatics next in order and the lymph tubes between the primary disease and the lymph nodes must be removed. I believe that it is actually a law that in operating on cancer of the lip or tongue it is absolutely essential to remove the submaxillary glands, because, as Ogston pointed out long ago, that without removing these salivary glands it is impossible to remove all the lymph glands. Since I first heard Jackson describe his operation two years ago I have used no other.

DR. OLIVER C. SMITH, Hartford, Conn.: At the Hartford Hospital, in operating on cancers of breast, throat, mouth or tongue we place the upper part of the body at an elevation of from 45 to 60 degrees, thus diminishing the amount of circulation in

the field. We segregate the blood still further by binding the lower extremities at the groin with Martin's elastic bandages applied tight enough to prevent the return circulation. We record the blood-pressure, taken in the arm, at intervals during the operation, and find that it falls usually from 20 to 40 mm. This position and segregation minimizes the hemorrhage, gives nearly a dry field and brings the patient up nearer to the operator. In relation to extending the incision to the mouth in an upward curve, as has been suggested by one speaker, one needs to be careful not to carry this curve too far. In an instance of which I have knowledge the patient wore a goatee following the operation. These upward curves may have affected his disposition pleasantly, as in the speaker's case, but he certainly looked like the devil.

DR. W. LEMOYNE WILLS, Los Angeles, Cal.: If there is anything that the surgeon needs to have drilled into him it is anatomy. Surgeons are more apt to ignore the anatomy than their knowledge justifies. We all know how uncomfortable an ill fitting armhole of a coat is and so is a scarred axilla holding the arm down to the chest. We should give this matter considerably more attention. Therefore, Dr. Jackson's paper is a most timely one, and future officers of this section should encourage the presentation of such papers.

DR. JOHN C. MUNRO, Boston: Dr. Jackson's principle we have used with the greatest satisfaction. Even though we are extending it as he suggested in his remarks to the modification that Handley suggested yet the principle still lies there in his flap and it has been of great help in carrying out our work.

DR. MARCELL HARTWIG, Buffalo, N. Y.: I do not believe that a man will look like the devil if the surgeon transfers a good chunk of the upper lip. In my experience there is no more perfect and beautiful mouth to be made than if the mucocutaneous edge of the upper lip be used, of course, including the supplying artery. If much of the lower lip or all of it has been lost one can make a very nice mouth by cutting horizontally one-half of the side of the upper lip and stretching it toward the center of the lower lip, doing the same on the other side. That gives the patient a good mouth and there is no trouble with hair growing inside the mouth, as I saw in a case in which the late Dr. Post had used the skin of the chin. Has Dr. Jackson ever operated in a case in which the arm was swollen? I would urge pathologists to examine every case of death from other diseases and see whether infection is transmissible through the lymph nodes. We ought to know exactly when the first infection of the glands occurs. I am inclined to believe that it occurs almost instantaneously.

DR. J. C. STEWART, Minneapolis: In operations for cancer of the breast has it been observed that recurrences have changed their position since the adoption of the Willy Meyer, Jackson and other operations in the axilla? It seems to me that when we did the Halsted operation there were more recurrences in the axilla and that since we began to operate from the axilla there have been more recurrences over the lower portion of the field of operation. That may be a mistaken observation, but it appears to be true, and, if so, it demonstrates that the handling and manipulation of the breast and other cancer tissues during the operation drives the cancer material toward the lymphatics in the direction where the structure was last severed from its connection with the body. It seems to me that there is more danger from the dissemination of cancers by rough handling than by transplantation. Dr. Binnie's observations on the lymphatics would seem of rather theoretical value, as he must admit the passage of cancer cells through them on their way to the nodes and his inability to specify any tissues when the lymph channels are surely free from such cancer cells.

DR. J. N. JACKSON, Kansas City, Mo.: Some years ago in reading a paper on traumatic surgery I said that true conservatism is that which puts life first, then function and then form. That rule should be observed particularly in such conditions as cancer of the breast. The first aim in the diagnosis or treatment of suspicious cases is to know whether the disease is cancer as early as possible, and if it is, beyond any question, get right after it. When we recall that 90 per cent of tumors of the breast are malignant or ultimately become so, there is no excuse for delay in operation. I believe that in doubtful cases the immediate diagnosis by operation should be insisted on in every instance. I further believe, however, that knowing the statistics of the general probabilities, if we are unable to make an absolute diagnosis, the patient should be given the benefit of the doubt as to life and a radical operation should be done. In nine cases out of ten the patient's life is jeopardized by waiting. I know of cases in which conservative work was done and the patient came to me later with a malignant disease which terminated fatally even after radical operation. I would not advocate any operation for cancer which in any way restricts the field of radicalism that gives the patient the best chance for an ultimate recovery. My one argument is that in this operation the removal is as extensive as can be suggested by any operation. If we can preserve life and function we have two elements of conservative surgery, and I believe that my operation gives better function than any other. And, finally, if we can preserve life, form and function this should be done. Thoroughness of surgery should not be sacrificed for the art of surgery, but where art and science can be combined this should be done. I fear that we have gone too much to the scientific side and have overlooked art.

Dr. Grant's method of operation for cancer of the lip escaped my attention until about six months ago and since then I have had two cases in which I have been able to carry out the method. It certainly does what he claims for it, so far as complete removal of the growth and the lymph glands is concerned, and it also gives a beautiful cosmetic effect. It far surpasses any operation for cancer of the lip in thoroughness and final results. An important feature of the operation is the fact that the chin, which is not involved in the disease, is left as a base on which the new lip is reconstructed. It gives a lip which is natural in appearance and does not draw down. Dr. Stewart makes his incision upward when there is opportunity to enlarge the mouth. Dr. Grant says to make the incision downward, and my observation coincides with this. At one operation I had a dispute with a friend as to which direction the incision should take. I did it downward on one side and upward on the other. If the levator muscle is left unopposed it draws the lip up and our patient had a mouth which was rather ludicrous. When the incision is made slightly downward there is equalization of opposing muscles and the mouth is straight and it has a normal contour. That is an important point to bear in mind.

PALATOPHARYNGEAL ADHESIONS

METHODS ADOPTED FOR THEIR RELIEF, WITH THE REPORT OF A NEW OPERATION *

JOHN O. ROE, M.D.
ROCHESTER, N. Y.

There is no one malady, not immediately dangerous to life, that so seriously afflicts the person possessing it as adherence of the palate to the pharyngeal wall. When we consider its baneful effects on nearly all the functions of the upper air passages, on respiration, vocalization, hearing, smell, taste and deglutition, and the very disappointing results so frequently attending the attempts at its relief, it is remarkable that operative measures have not long since been devised affording a reasonable certainty of success in such unsatisfactory cases.

Adhesions of the palate or pillars to the posterior pharyngeal wall present a variety of conditions, which may be differentiated as follows:

1. Adhesion of the normal palate or pillar, or both, to an ulcerated pharynx.
2. Adhesion of an ulcerated palate or pillar, or both to a normal pharynx.

*Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909. Considerations of space compel the abbreviation of this article in THE JOURNAL by omitting part of the case reports. The complete article may be found in the Transactions of the Section and in the author's reprints.

3. Adhesions of both an ulcerated palate or pillar, or both, to an ulcerated pharynx.
4. Adhesion of one pillar and one side of the palate to the pharynx.
5. Adhesion of the border of the palate to the pharynx except a small opening in the center.
6. Adhesion of the entire soft palate to the pharynx, the one merging imperceptibly into the other.
7. Adhesion with marked cicatricial thickening, contraction, distortion and narrowing of the entire pharynx, or of the entire palate or of both.
8. Association of the latter condition with cicatricial adhesions to the base of the tongue or to the larynx, or both.

Numerous cases are reported illustrating the great variety, both as to extent and location, of these adhesions, from the simple attachment of one pillar or a portion of the palate to the pharynx, to the adherence or

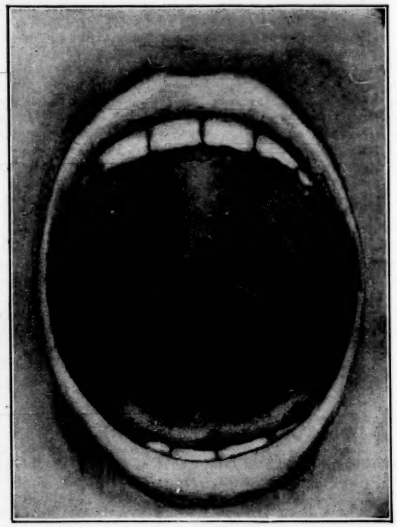

Fig. 1.—Two rings of silver wire, the dotted lines indicating their location, passing out through opening in center under uvula: Cases 1 and 3.

growing together of all the different tissues of the nasopharynx and fauces. Among some of these latter cases illustrating the severity of the disturbance that may be caused thereby I mention the following:

Vansant[1] reports a case of extensive syphilitic cicatricial adhesions of the tongue to the inner surfaces of the gums, to the roof of the mouth, and to the palate and pharyngeal wall. The constriction of the fauces was so great and respiration and deglutition became so extremely difficult that during the years 1889 and 1890 four extensive operations were performed, excising the cicatricial tissue, but to no avail, the cicatricial tissue being replaced and the constriction returning in about six weeks. Tracheotomy was advised but refused, and the patient finally died of inanition and exhaustion.

E. Harrison Griffin[2] reports a case (the patient, a man, aged 44, who had had syphilis twenty years previously) in which the palate was destroyed, the remaining stump being firmly adherent to the pharynx. The nose was destroyed to the level of the face. The patient's mouth was so closed by syphilitic adhesions that only two fingers could be passed with great difficulty, by stretching the mouth to its utmost capacity. He was completely aphonic. In this case there was complete separation of the two pharynges by these membranous and cicatricial adhesions.

Lublinski[3] and Largreuter[4] report cases in which the cicatrix so involved the pillars of the fauces, base of the tongue and soft palate as to cause a ring of tissue just above the larynx that so obstructed respiration as to require tracheotomy. Gerhart[5] reports a case in which a diaphragm formed just above the larynx that would scarcely admit the tip of the finger.

1. Vansant: Med. News, Philadelphia, 1894, lxv, 606.
2. Griffin, E. H.: Med. Rec., New York, 1888, xxxiii, 37.

ETIOLOGY

Palatopharyngeal adhesions may be (1) congenital; (2) simple inflammatory—catarrhal; (3) the result of excoriation of the mucous membrane from acrid discharges; (4) local manifestations of the exanthemata; (5) local manifestations of constitutional diseases, as tuberculosis, syphilis, hereditary or acquired, and "so-called" scrofula; (6) traumatism.

Hall[6] reports the case of two children, aged 6 and 11, who had been sent to him by the medical inspector of schools to be operated on for adenoids. No adenoids were found, but in both cases adhesions of the palate to the pharynx were discovered to be the cause of the trouble, which undoubtedly were congenital. These adhesions on being broken up with the finger gave the sensation like that of an adherent placenta.

In one case, that of a child 18 months old, which came under my observation, in consultation, there was complete adherence of the palate associated with complete bony occlusion of the posterior nares.

Contrary to the opinion of Lieven,[7] that there must of necessity have been two ulcerated surfaces opposing each other, Ried[8] observes that simple inflammatory or catarrhal inflammation, in which plastic lymph is thrown out on the surface, may readily cause adherence of the two surfaces. Schech[9] observes that adhesions may follow the superficial erosion from simple desquamation of the epithelium, and Lavrand[10] mentions a case of catarrhal ulceration of the pharynx which was followed by adhesion. This case, which he speaks of as having a scrofulous basis, was in all probability luetic.

The same condition of catarrhal inflammation, however, may be caused by acrid discharges from ulcerated surfaces, from the accessory sinuses, or from other chronic inflammatory conditions. In the case of gummy deposits, which most often take place in the posterior pharyngeal wall, the breaking down of this material and the formation of ulcerated surfaces in this wall with their attendant discharges account for the readiness with which the palate becomes denuded of its epithelium, and, as the ulceration in the pharyngeal wall heals, adherence of the two surfaces takes place. The adherence in these cases is also aided by gravity when the patient is in the recumbent position, and also by the impairment of the action of the pharyngeal dilators, by the inflam-

3. Lublinski: Berl. klin. Wchnschr., 1883, xx, 361.
4. Largreuter: Arch. f. klin. Med., 1880, xxvii, 328.
5. Gerhart: Virchows Arch. f. path. Anat., xxi, 40.
6. Hall: Brit. Med. Jour., 1909, i, 18.
7. Lieven: München. med. Wchnschr., 1895, xlii, 489.
8. Ried: Jenaische Ztschr. f. Med., u Naturw. Leipz., 1864, i, 409
9. Schech: Deutsch. Arch. f. klin. Med., 1875, xvii, 75.
10. Lavrand: Jour. Soc. méd. de Lille, 1891, ii, 361.

matory process, or the luetic poison, as was pointed out by Neumann.[11]

Local manifestations of the exanthemata may in the same manner produce a condition favoring adherence of the parts. Albertin[12] mentions a case of adhesion of the palate to the posterior wall of the pharynx taking place after variola. MacMahon,[13] Symanowski[14] and Ingals[15] report cases following diphtheria; such a case, presently to be reported, has also come under my observation.

Of the constitutional conditions which may cause palatal adhesions we find cases of lupus and rhinoscleroma reported by Cartaz[16] and Castex;[17] Mikulicz[18] reports cases following leprosy; Dieffenbach[19] and Paul[20] report cases following scrofulous ulceration, and Volkmann[21] has observed it following tuberculous ulceration of the pharynx. This must be rare, as tuberculous ulcerations of the pharynx show but little inclination to heal.

Among the traumatic causes we may mention gunshot wounds, substances accidentally driven through the mouth, laceration of the fauces during surgical operations, and the use of caustics and the galvanocautery. Walb[22] reports the occurrence of marked stenosis of the throat and adhesions of the soft palate in several cases resulting from a too vigorous and unskilful use of the galvanic and Paquelin cautery in the hands of surgeons and throat specialists. Hamilton[23] mentioned a case which came under his observation in which the excessive use of the galvanic cautery caused adhesions of the posterior pillars to the pharyngeal wall.

An interesting case of adhesion of the palate to the pharynx following laceration during a surgical operation came under my observation recently and will presently be described.

By far the largest number of cases, however, are caused by tertiary syphilis. Paul,[20] of Breslau, observed 30 cases of adherent palate; 26 of them were caused by tertiary syphilis and 4 by scrofula. Cartaz[16] is of the opinion that all cases of total adhesion resulting from ulcerative processes are due to syphilis. He collected reports of 39 cases, 32 of which were ascribed to syphilis and 5 to malignant scrofula, which Cartaz believed to be syphilis, and to which all doubtful cases are to be ascribed. According to Schwebisch,[24] syphilitic adhesions are more frequent among men, while those resulting from scrofula are more frequent among women.

CHARACTERISTICS AND RESULTS OF THE LESIONS

The distinctive difference between adhesions due to syphilis and the other causes mentioned is that the former is usually characterized by marked cicatricial contraction, the result of the extensive destruction of tissue; while the adhesions resulting from other conditions are usually of a simple character, as if the parts were glued or had grown together, and are unattended with marked distortion. In all syphilitic cases the central point of the stricture is located where there has been the largest deposit of gummy material, and consequently the greatest amount of ulceration, as shown by the direction of the contraction or distortions of the palate and uvula, when the latter has not been destroyed. When the uvula has been destroyed, the palate coalescing with the pharynx, the former must have been the seat of the primary deposit associated with that in the pharynx. This latter condition, as Scheck[25] observes, is frequently associated with perforation of the palate, which drops back and unites with the pharynx as soon as the opening occurs.

Ulceration followed by adhesions frequently takes place in tissues hidden from view behind the velum; and, as it usually is not attended with a great degree of pain or soreness, the onset of the trouble is often overlooked and the mischief produced before the ulceration has been suspected. Hamilton and Lichtwetz[26] report cases in which the adhesion was revealed only by the rhinoscope and digital examination.

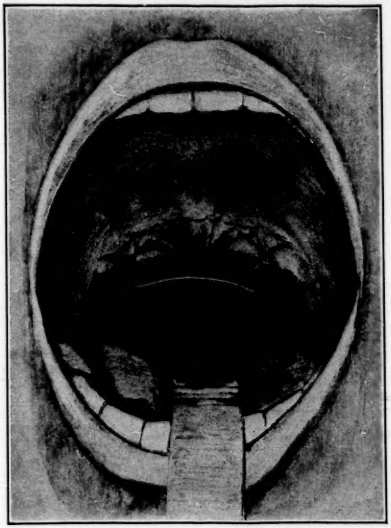

Fig. 2.—Single ring of silver wire, the dotted line indicating its passage above the adhesion behind the palate; Case 2.

Considering the frequency of such erosion, adhesion of the palate would doubtless be of much more frequent occurrence were it not for the movements of the muscles and the motions of the parts during the act of swallowing, speaking, breathing, and more or less the motions of the body, and also the separation of the parts by the mucus discharging from the posterior nares. Paul[20] called attention to this fact and also to the readiness and rapidity with which the adhesions take place when perforation of the palate occurs, doing away with these hindrances to union to a large extent. It is rare that ulceration of both the palate and pharynx take place at the same time, the gummy deposit being located in one or the other of these parts. The location of the deformity and the direction of the contraction, therefore, indicate the primary location of the deposit and

11. Neumann: Berl. klin. Wchnschr., February 8, 1892.
12. Albertin: Monatschr. f. Ohrenh., 1894, p. 196.
13. MacMahon: Internat. Centralbl. f. Laryngol., 1891, No. 5; Canadian Pract., February 16, 1891.
14. Symanowski: Vrtijschr. f. d. prakt. Heilk., 1864, lxxxii, 142.
15. Ingals: Tr. Am. Laryngol. Assn., 1883, p. 188.
16. Cartaz: Arch. internat. de laryngol., 1893, vi, No. 2.
17. Castex: Rev. de laryngol., 1892.
18. Mikulicz and Michelson: Atlas der Krankheiten der Mund- und Rachenhöhle.
19. Dieffenbach: Operative Chirurgie, Vol. i.
20. Paul: Arch. f. klin. Chir., vii, 195.
21. Volkmann: München. med. Wchnschr., 1895, xlii, 489.
22. Walb: Ztschr. f. Ohrenh., 1889-90, xx, 60.
23. Hamilton: Montreal Med. Jour., 1895, xxiii, 193.
24. Schwebisch: Thèse de Paris, 1880.
25. Scheck: Arch. f. klin. Med., 1876, xvii, 59.
26. Hamilton: Montreal Med. Jour., 1895, xxiii, 191; Lichwetz: Ann. d. mal. de l'oreille et du larynx, 1894, xx, 815.

the site of the greatest destruction of tissue as observed by Bosworth.[27]

Dr. Andrew H. Smith[28] has appropriately likened the process of palatal adhesions to that of burns between fingers. In such cases reunion is certain to take place after liberation and even after cicatrization, if a small granulating space is left at the point where they join, as it will creep along each finger, destroying the newly-formed cicatrix, while adhesion of the opposed raw surfaces will advance at a corresponding pace. The same process is also to be observed after the liberation of webbed fingers.

In some cases the adherence of the velum to the pharynx takes place at many and different points, as described by Homolle,[29] instead of being progressive from the sides, as is usually the case, leaving a small opening in the center. In other cases, however, the adherence of the entire palate seems to take place simultaneously when there is an extensive ulceration resulting from the deposits of gummy material in the different structures and breaking down at the same time.

The rapidity with which the adhesion takes place toward the close of the healing of the ulceration is sometimes truly surprising, often two or three days only elapsing from the time a free opening is observed until it is found closed.

Complete union of the palate to the pharynx is the exception rather than the rule, for it is rare that a small opening can not be found through which a slender probe can be passed. This coincides with the experience of Bosworth, Rice, Cartaz and some others, and, judging from the imperfect reports of many cases, it seems quite probable that a more careful examination would have revealed a small opening. Of the 30 cases reported by Paul,[30] there was total adherence of the palate in 3 only. Bosworth[27] collected reports of 45 cases, of which 19 were reported as being total, while 26 were partial adhesion of the palate.

Regarding the local disturbances caused by these adhesions Hajek[31] very truly says:

> While the partial adhesion of the soft palate and the back wall of the throat seldom give much trouble, the total closing of the space between the throat and the nose is accompanied by grave consequences. The impossibility of breathing through the nose, necessitating therefore continual opening of the mouth and the subsequent dryness of the throat, the inability to blow the nose, the accumulation of secretions in the nasal passages, often becoming fetid; the frequently associated ear troubles and consequent deafness, the sleeplessness and marked effect on the general health make this condition well-nigh unbearable and make on the surgeon the most urgent demands for its relief.

When the closure of the postnasal opening, however, is sufficient to prevent the passage of air and the drainage of the postnasal space, the symptoms are the same as when the closure is complete, the existence of a small opening being, as Bosworth[27] and Cartaz[16] observe, of no practical importance.

The degree to which the ears and hearing become affected depends largely on the extent to which the tubal orifice or the tubal muscles become involved, and is entirely independent of the closure of the postnasal space below. Dunbar Roy[32] reports a case of complete syphilitic occlusion of the postnasal opening in a man 65 years of age, in which the hearing was unaffected, being quite acute for a man of his age. Barbon[33] reports a

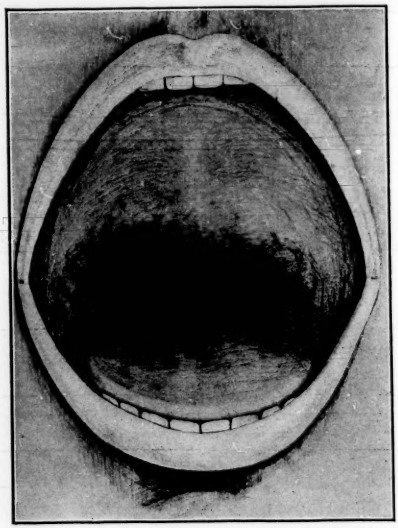

Fig. 3.—Indurated condition of fauces with adhesion of palate to pharynx—tonsils unremoved; Case 4.

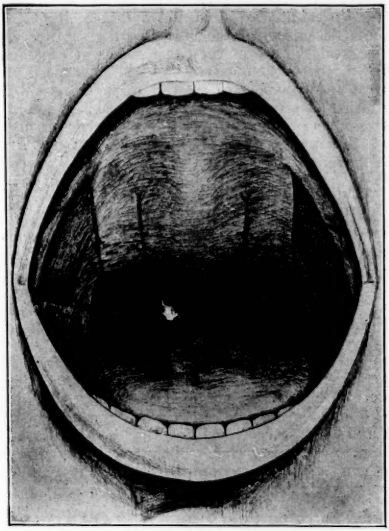

Fig. 4.—Flaps stitched after liberation of palate. Location at sides from which flaps were taken, tonsils removed; Case 4.

27. Bosworth: Diseases of the Nose and Throat, New York, 1892, ii, 280.
28. Smith, A. H.: Tr. Am. Laryngol. Assn., 1883, p. 187.
29. Homolle: Thèse de Paris, 1875.
30. Paul: Arch. f. klin. Chir., vii, 199.
31. Hajek: Internat. klin. Rundschau, 1892, vi, 1385.
32. Roy, Dunbar: Alabama Med. Jour., 1903, p. 556.
33. Arch. internat. de laryngol., 1893, vi, 70.

patient almost totally deaf, in whom the hearing was restored by the liberation of the adhesion and re-establishment of nasal respiration; but on the re-formation of the adhesions and closure of the postnasal opening deafness immediately returned. This Barbon ascribed to the rarefication of the air in the middle ear. In a similar case Martin[33] overcame this rarefication of the air in the middle ear and restored the hearing by establishing an opening through the membrana tympani.

These cases are accounted for by the fact that the infiltration has caused no obstruction of the Eustachian tube or paralysis of the tubal dilators, as mentioned by Bosworth.[27] In other cases deafness results from the simple closure of the postnasal space and cutting off nasal respiration.

The voice, which is nasal in tone and sometimes almost unintelligible, may occasionally be comparatively unaffected, as in cases reported by Hartmann,[34] Cartaz[35] and Mauriac.[36]

The characteristics of the adhesions differ according to the various causes. Those resulting from syphilitic ulcerations are dense and fibrous, the vascular structures being almost entirely destroyed; while those resulting from purely inflammatory conditions are mainly muscular, containing very little fibrous tissue, or there may be simply an adherence of the mucous surfaces. The adhesions are very variable in thickness and extent, from a simple web or band-like union to a complete union of the entire parts, often extending to the vault and including both nasal passages. In some cases the contraction of the postnasal passage above the adhesion forms a serious barrier to nasal breathing after the adhesions of the palate have been liberated. Rice[37] mentions this fact and also the formation of new connective tissue to replace the destroyed tissue, amounting in some cases to actual hypertrophy, which diminishes the diameter of the pharynx in all directions. This condition, he very truly says, compromises the success of operative measures to a very large degree.

The extent to which the deep muscular structures are altered in these cases of destructive ulceration is illustrated by the results of postmortem examinations which were conducted by Dr. William Turner,[38] of Edinburgh. In these cases he found the deep muscular structures of the postpharyngeal wall almost wholly altered; the muscular fibers of the superior and the upper portion of the middle constrictor muscles were entirely replaced by connective tissue, while the muscles of the palate remained unchanged.

TREATMENT

In the treatment of these conditions it is important, as Lieven[39] states, to delay any operative procedures for the relief of the adhesion until all ulceration or inflammation has completely subsided. Much can be done, however, by timely recognition of the conditions that may cause adhesions by means of both local and constitutional treatment. It is, however, only in the early stages of syphilitic manifestations in the nose and throat, before the tissues have broken down, that constitutional treatment is of avail. In these cases this treatment should be pushed most vigorously. The iodids should at once be given in the largest doses, diminished if necessary rather than to be obliged to increase them, in order to overwhelm and head off the activity of the virus before breaking down of the tissues has taken place. After ulceration has occurred they can only arrest it, and, as Schadle[40] says, "so far as the synechia is concerned, total closure is the result regardless of antisyphilitic treatment."

Previous to the days of laryngoscopy and the rhinoscopic mirror so little was known regarding lesions of the throat that these conditions were little understood; but since that time the etiology and characteristic conditions attending palatal adhesions have been generally well known, although it has been only during the past two decades that any real progress has been made in their successful treatment. The chief difficulty, however, does not reside in the operation of liberating the palate, but in maintaining the opening during the process of healing. Verneuil[41] very aptly says, "Nothing is easier than the liberation of the adhesions, but nothing more difficult than to prevent their reproduction." So discouraging have been the results that Cartaz[42] has questioned the advisability of attempting the unsatisfactory task required in most of these cases.

The various methods employed for dealing with this condition are by (1) mechanical dilators; (2) caustics; (3) permanent obturators; (4) suturing; (5) plastic operations.

The usual method of liberating these adhesions is with the rectangular knife or scissors, a sound or probe being introduced through the nose and the incision made at the point where the palate is made to belly by the pressure of the sound. Dieffenbach[43] used curved scissors and maintained the opening with gauze strips. Later he used charpie tampons as a packing. Hajek[44] adopted a method of repeated incisions and repeated stretching by packing the wound with gauze. The complete liberation of the palate he prolonged over several sittings. Hajek[45] has since (in 1897) constructed a dilator similar to Frankel's nasal speculum, having two blades turned up at the ends for inserting behind the uvula and palate. It is dilated by turning a screw until the opening is stretched to its fullest capacity and the patient is taught to use it himself. Moritz Schmidt[46] used Hajek's method of making incisions on each side of the uvula and stretched the openings with the lead sounds of Lublinski, held in place for one hour daily.

Elsberg[47] separated the parts by means of a blunt staphylorrhaphy knife, then forcibly dilated with the finger, and had the patient use daily a hard rubber palate-retractor to prevent readhesion. Schadle[48] employed a strip of iodoform gauze two inches wide and fifteen inches long, divided throughout, excepting a short portion in the center. The upper ends were passed through the nostrils, respectively, until the crotch came against the posterior extremity of the septum narium; the other ends were brought out through the mouth and tied separately over the upper lip to the upper ends of the tape, sufficiently tight to pull the palate forcibly forward. This was changed daily and worn for several weeks until healing had taken place. The use of rubber bands and ligatures, passed out through the nose and mouth and tied over the jaw, has been adopted by many.

34. Hartmann: Versamml. nord-deutsch. Ohrenaerzte in Berlin, April 22, 1889.
35. Cartaz: Arch. internat. de laryngol., 1893, vi, 81.
36. Mauriac: La syphilis pharyngo-nasale, Paris, 1877, p. 21.
37. Rice: Tr. Am. Laryngol. Assn., 1895, p. 110.
38. Turner, W.: Edinburgh Med. Jour., January, 1860, p. 612.
39. Lieven: München. med. Wchnschr., 1895, xlii, 489.
40. Schadle: St. Paul Med. Jour., 1906, viii, 129.
41. Verneuil: Bull. et mém. soc. de chir., 1876, n. s. ii, 310.
42. Cartaz: Arch. internat. de laryngol., vi, 66.
43. Dieffenbach: Operative Chirurgie, i.
44. Hajek: Internat. klin. Rundschau, 1892, vi, 1386.
45. Hajek: Allg. Wien. med. Ztg., 1897, xlii, 13.
46. Schmidt, M.: Krankheiten der oberen Luftwege, 1894.
47. Rice: Tr. Am. Laryngol. Assn., 1885, p. 112.
48. Schadle, J. E.: Total Adherent Soft Palate, THE JOURNAL A. M. A., 1894, xxiii, 457.

The readiness with which cicatricial tissue reunites when separated and the persistence with which this scar tissue contracts led Coulson,[49] in 1862, to dissect out the cicatrix, a method which was also employed by Ried[8] in 1864 and Rothenberg[51] in 1876. He first separated the palate above the line of the scar and dissected out the cicatrix with forceps and scalpel. This plan was successfully adopted by Hamilton[52] in the case of a woman aged 32. There had been obstruction of the nose since she was 14 years of age, following ulcerated throat at 12, due to hereditary syphilis. There were no signs of adhesions until by the use of the rhinoscope and by digital examination it was found that about half an inch up, the posterior surface of the palate was completely adherent to the posterior pharyngeal wall. The uvula was first freed and later on the cicatricial tissue was removed *en masse*. The opening was dilated with the finger and with Griffin's dilator and remained patent. The patient's health was immediately greatly improved.

One of the principal things that discouraged free liberation of the adherent palate was the fear of hemorrhage, for the control of which von Dionisio[53] used a rubber ball inflated like a Barnes dilator. To obviate the danger that may attend such hemorrhage T. Gilbert Smith,[54] of London, advised that a preliminary tracheotomy be performed, and even as late as 1903 Tilley[55] reports a case in which he performed tracheotomy before liberating the palate. The small amount of bleeding, however, convinced him of the folly of the procedure, which he said he would not undertake again.

The introduction of the galvanic cautery by Voltolini promised to add an important method in the treatment of these cases, as it not only obviated the danger of hemorrhage but gave hope that contraction would not readily take place after the burning. These hopes, however, proved groundless, for it was found that contraction took place more readily and more firmly after cauterization than after cutting, or, more particularly, after tearing the parts away, as was practiced by Verneuil.[41]

In 1883 Drs. Smith and Delavan[56] brought forward the use of monochloracetic acid in the treatment of this condition. Two years before, Dr. Smith called attention to the peculiarity of the caustic action of monochloracetic acid, in that the eschar remained attached until cicatrization had taken place beneath it. On account of this peculiar action Dr. Delavan applied it to the cut surfaces after the adherent velum had been liberated, and, although the surfaces remained in contact afterward, the healing took place beneath before the eschar separated and the operation proved a success. Schadle[48] also reports the successful use of the acid in a similar case. While the immediate result in these cases was most excellent, the ultimate result of the cases is not stated. In one of the cases which I have to relate the immediate result was most encouraging, but subsequently contraction gradually took place from the sides and progressed toward the center until the opening was finally closed, excepting a small passage in the center.

The uncertainty of all known measures to maintain a free opening after liberation of the palate led different operators to adopt the method of suturing the parts. Dieffenbach[43] passed ligatures through the soft palate, drew it forward as far as possible and held it away from the pharyngeal wall by passing the ligatures out of the mouth and fastening them around the ears. Later he sutured the edges of the incision together after division, but found it an exceedingly difficult procedure, and, as Kummel[57] remarks, for less skilful operators this suturing would hardly be possible. He also turned the cut surface backward on itself and stitched it there to still further prevent adhesions.

A more complicated method of suturing the palate was devised by von Lesser,[58] of Leipsic, in 1879. By his method the free portion of the palate was split parallel to its surface, and the posterior flap, being thus entirely denuded, was brought forward and rolled up under the anterior flap. The anterior flap was then split in the center, and also liberated at the sides, and was turned back over the rolled up posterior flap, so as to cover the denuded membrane; in this way reunion of the velum to the posterior pharyngeal wall was to be prevented.

These methods of suturing together the mucous surfaces of the palate are feasible only in those cases in which the attachment of the palate is confined to its free border, for in cases of more extensive attachment sufficient mucous membrane is not available to cover the denuded surface.

The failure of all these different methods to maintain a permanently free opening in a very large majority of cases, no matter in what manner the palate was liberated, led to the adoption of a permanent mechanical obturator to be worn continuously or held in the opening for a long time until healing was complete and the tendency to contraction overcome by the absorption of the cicatrix or of the plastic exudate.

In order to accomplish this result Cook,[59] in 1873, devised the original plan of suspending a lead plate, made of a suitable size to fit the aperture after the palate had been liberated, behind the veil of the palate, by two strings passed through the nostrils. This the patient wore continuously for six weeks or more, as the case might require, without interfering with deglutition, and it successfully prevented readhesion. Later on hard rubber was substituted for the lead plates by different operators, as von Beregszaszy,[60] Hajek,[61] Barajas,[62] the plates being made to completely fill the aperture and suspended by string passed through the nose and tied in front of the nostrils.

The principal objection to the permanent obturator in the posterior nares was found to be the cutting off of nasal respiration. This objection was obviated by Lucas-Championnière[63] in 1876, who inserted a silver tube, held in place with gold wire fastened to the teeth. Kuhn,[64] in 1892, constructed a fenestrated obturator or tube made of hard rubber, which was held in place by being attached to a dental plate, the plate and tube being constructed of one piece. This method was also successfully adopted by Couetoux[65] in 1893. Kollbrunner,[66] of Strassburg, in 1896, and later on McDou-

49. Coulson: Lancet, London, 1862, ii, 529.
51. Rothenberg: Wiener med. Presse, 1876, No. 33.
52. Hamilton: Montreal Med. Jour., 1895, xxiii, 191.
53. Von Dionisio: Monatschr. f. Ohrenh., 1892, p. 210.
54. Smith, T. G.: Brit. Med. Jour, 1880, ii, 588.
55. Tilley: Jour. Laryngol., Rhinol. and Otol., 1903, n. s. xvii, 271.
56. Smith and Delavan: Tr. Am. Laryngol. Assn., 1883, p. 187.
57. Kummel: von Bergman's System of Surgery, i, 902.
58. Von Lesser: Berl. klin. Wchnschr., No. 23, 1879.
59. Cook: Med. and Surg. Reporter, Philadelphia, 1873, xxviii, 203.
60. Von Beregszaszy: Internat. klin. Rundschau, 1888, No. 23.
61. Hajek: Internat. klin. Rundschau, 1892, vi, 1387.
62. Barajas: Rev. hebd. de laryngol, 1907, ii, xxvii, 459.
63. Lucas-Championnière: Ann. d. mal. de l'oreille et du larynx, 1876, p. 88.
64. Kuhn: Monatschr. f. Ohrenh., 1892, xxvi, 189.
65. Couetoux: Ann. d. mal. de l'oreille et du larynx., 1893, xix, 856.
66. Kollbrunner: Strassburg, C. Goeller, 1896.

gall,[67] in 1903, described the same method as "a new method of dealing with adherent soft palates," without apparently knowing that it had been employed and published before. The only difference in McDougall's device was that he used a metal tube and plate soldered at one end to the patient's tooth-plate.

It is interesting to note that Schadle[68] in 1906, without knowing of the existence of these previous devices, constructed one of hard rubber, the tube and tooth-plate being made of one piece, the same as the one devised by Kuhn.

The permanent relief this device afforded and the little discomfort caused by it is, in many cases, highly gratifying. The only drawbacks are the nasal tone it gives to the voice and, in some cases, the fact that, on swallowing, the food is sometimes forced into the posterior nares, owing to the inability of the patient to close the epipharyngeal space.

The most decided step in advance in the treatment of palatopharyngeal adhesions, however, was taken by Nichols[69] when, in a paper before the New York Academy of Medicine on "A Method of Correcting Adhesions Between the Soft Palate and the Pharyngeal Wall," he proposed the plan of introducing silk sutures at the side of the palate and allowing the sutures to remain *in situ* until a healed channel had taken place around them. The palate is then liberated between these two channels, great care being taken not to wound the outer wall of the channel.

In the discussion following Nicholl's paper, Rice[7] of New York remarked: "I do not think Dr. Nichols is overestimating the value of his method, for it is the first scientifically useful operation yet devised to cover the special requirements."

This method is similar to that proposed by Rudtorffer for the treatment of webbed fingers by securing a healed opening at the base or angle of the adhesion before the fingers are liberated. For this Rudtorffer used lead buttons, and afterward silver or gold rings.

This operation of Nichols is especially adapted to cases in which the adhesions are limited to the border of the velum, it being inapplicable to adhesions high up behind the palate. In three cases I have employed his method with most gratifying results, modifying it only by substituting silver wire for the silk. Figures 1 and 2 illustrate the particular methods I adopted in introducing the silver wire in the different cases. In two cases a double ring or loop was used, one on each side, each one passing out through the central opening, as shown in Figure 1. In the third case but one ring or loop of wire was used, which was so introduced as to pass entirely around the adherent portion in the center, as shown in Figure 2. In a fourth case this method failed, owing to the thickness of the adhesions. In this case I devised a plan of covering the raw surfaces at the outer angles with flaps of mucous membrane taken from the neighboring parts at the sides. These flaps were made of sufficient length to cover the entire extent, vertically, of the liberated surfaces and were stitched in place with sutures passed directly through the palate.

The details are more fully described in the report of the case which follows.

CASE 4.—*History.*—A woman, aged 24, was referred to me in May, 1908, for an operation on an adherent palate. The occlusion was complete except for a small opening in the center through which a slender silver probe could be passed. This condition was the result of traumatism that had been produced in an attempt to excise the tonsils one year before. The operation had been done under ether, which the patient took very badly. There had also been much bleeding which so obscured the field of operation that the posterior pharyngeal wall was extensively lacerated and the posterior pillars of the fauces, the uvula, and much of the border of the soft palate were cut away.

Treatment.—There was much thickening and induration of the tissues and the adhesion was quite broad. I succeeded, however, with some difficulty in introducing the sutures at the sides, employing two as in the previous cases. At the time I decided to liberate the adhesion I thought I had succeeded in obtaining a healed opening around the wire all the way through, but on operating it proved that, owing to the inflammatory thickening resulting from the operation, the healing had extended but little beyond the mucous membrane. This method was therefore certain to prove a failure and accordingly some other expedient must be resorted to. It was also certain that attempts to prevent reunion of the parts by plates held *in situ* would be futile and that a successful result must be obtained in some other manner. My previous experience in plastic work, however, came to my rescue by suggesting the covering of this raw surface with mucous membrane. This proved in every way successful.

Operation.—As it was necessary to cover but one surface of this opening the anterior or palatal side was most available. In order to secure the mucous membrane for this purpose a broad flap was taken from the side of the palate and inside of the cheek, including sufficient submucous connective tissue to assure its vitality. This flap was then brought down and turned backward and upward around the outer and lower border of the soft palate, and stitched at the sides and the free border through it to the palate along the upper end of the flap that had been turned up behind the palate was stitched to the latter with sutures passed directly through the palate. Complete union of this flap took place and on healing there was no undue contraction at the site of these flaps, nor was there the slightest tendency for the readherence of the soft palate to the pharynx at any point, all of which was very gratifying. I did not attempt to cover the center of the soft palate with mucous membrane, it hung so free from the pharynx that adhesion of the two surfaces could not readily take place. I should also mention that the surfaces from which the flaps had been taken were speedily covered with mucous membrane and soon all traces of them disappeared. The central portion of the palate was much thickened, and this thickened tissue was utilized, by cutting and stitching it into shape, to form a very satisfactory uvula. The levator palati muscles had not been sufficiently injured to impair their function so that by the construction of this new uvula the action of the soft palate, in closing the posterior nares during deglutition and phonation, was completely restored. Figure 3 represents the fauces before the operation. Figure 4 shows the flaps *in situ*.

Postoperative History.—At the time the patient came under my observation the voice was completely nasal and on account of the necessary mouth-breathing, she was gradually losing flesh and strength and had become exceedingly nervous. After the liberation of the palate and complete restoration of nasal respiration, however, she gained rapidly in flesh and strength, and at the end of three months had completely regained the thirty pounds she had lost during the period above described. A recent report from the patient's husband stated that she had had no trouble with the throat since the operation and that she was very well.

This method of dealing with faucial and palatal adhesion is, I believe, entirely new, since I have found no record of its having been done before, and it is radically different from those proposed by Dieffenbach and von Lesser. It is also a method that cannot fail to be successful in all these cases if the operation is carefully and properly done. While the silver suture method is quite satisfactory in many cases, particularly those in which the adhesion is thin and confined to the border of the palate, still it is slow, tedious, and causes the

67. McDougall: Liverpool Med.-Chir. Jour., 1903, xxiii, 295.
68. Schadle: St. Paul Med. Jour., 1906, viii, 127.
69. Nichols: New York Med. Jour., 1890, li, 219.
70. Rice: New York Med. Jour., 1890, li, 220.

patient some discomfort. It is also lacking in immediate results, so desirable in all surgical operations and in adaptation to all conditions that may be found. On the contrary, with this flap method, no matter how thick or extensive the adhesions may be, it is necessary only to make the flaps of the required size to cover the raw or denuded surface and stitch them carefully in place in order to make the operation in every instance a complete success.

44 Clinton Avenue South.

ABSTRACT OF DISCUSSION

DR. W. E. CASSELBERRY, Chicago: Palato-pharyngeal adhesions may vary in extent from a slight distortion devoid of symptoms to a state of fusion into a densely cicatricial mass of the edges and fragments of the soft palate, faucial pillars and pharyngeal wall, which have chanced to survive a preceding destructive ulceration. The nasopharynx is all but closed, ending in a conically contracted cul-de-sac from which ribs of scar tissue taper downward to merge into the twisted boundary of the pharynx. It happens that most of my cases have been of this aggravated type, syphilitic in origin, and apparently far worse than those described. These patients constitute an unfortunate class, devoid of nasal drainage and ventilation, defective in speech, smell and taste, and go the rounds, seeking whom they can trust to relieve them and again losing confidence before the usual method of treatment by repeated forcible divulsion, could possibly culminate in permanent relief. To encourage persistency in the divulsion treatment, having first made or enlarged the opening by incision, I have taught the patients to make self-divulsion by the insertion and expansion of a small adenoid forceps, and I recall one case in particular in which, after many months' persistence in self-treatment, a serviceable, permanent opening seemed assured. Dr. Roe merits our gratitude for elaborating the suture method and for the first report of a case successfully treated by an original flap operation. I have been familiar with the suture method for some time, but in my cases, it seemed too unpromising to attempt, the parts being so distorted that one could not tell where to place a suture so that it would be likely to accomplish the desired effect. But, in the class of cases Dr. Roe has illustrated, it certainly is the best operation. With respect to the flap method, Dr. Roe's case having been traumatic and not syphilitic in origin, it scarcely indicates that the flap method will be found generally applicable, although certainly of value whenever tissue from which to form a flap is available nearby.

DR. W. S. ANDERSON, Detroit: The only successful method I have ever used, and that was very satisfactory in one serious case in which there was membrane all across the nasopharynx, except one small opening, consisted in passing a suture from the throat up into the nasopharynx and cutting off a pillar of tissue; tying that and waiting until a cicatrix had formed around it and then cutting through. Then I put in another ligature and waited, and again cut off that pillar of tissue. By this method in two months I had separated the membranous portion until I had a good-sized opening into the throat, which has remained permanently open for four or five years. The attempts I have made with other methods have failed.

DR. C. F. WELTY, San Francisco: Six years ago I saw Dr. Jansen do an operation which I will attempt to describe. There was but a small opening left in the naso-pharynx. The attachment below and above was severed by a curved knife on either side; the mucous membrane from the soft palate, posteriorly and anteriorly, was brought together on either side; the denuded portion of the pharyngeal wall was cut so that it could approximate very well. In this particular case there was a very happy result.

DR. ROY P. SCHOLZ, St. Louis: Does Dr. Roe cover the wound, on the posterior pharyngeal wall, produced in the operation? In giving the causes for palato-pharyngeal stricture, there was no mention made of that form resulting from malignant growths; possibly for the reason that these forms are rarely dealt with except by radical means. In cases in which the tumor has been excised, or in which it still exists, but for some reason or other, radical removal of the tumor can not be undertaken, this method appears to be applicable. Recently a case came under my care, carcinoma of the palate (far advanced) with much infiltration of the connective tissues surrounding it, leading to almost complete separation of the oral from the nasopharynx. The disturbance made by this stricture was so great that relief had to be given, and for this and similar cases I believe this form of operation very suitable. This form of stenosis is not the result of ulceration or adhesion, but of contraction of the connective tissues deposited in the structure of the pharyngeal wall.

DR. DUNBAR ROY, Atlanta: I have had three of these cases of palato-pharyngeal adhesions and my experience agrees with that of Dr. Casselberry. It is almost impossible to get a flap from anywhere with such an amount of cicatricial tissue.

DR. W. W. CARTER, New York: Does Dr. Roe depend entirely on these rings of silver ulcerating through? Is it possible for them to ulcerate through the portion of tissue included within the ring and what reason would he give that this doesn't reunite with the posterior pharyngeal wall?

DR. G. W. MITCHELL, Baltimore: I had a case which gave satisfactory results so far as restoration of the function of hearing was concerned. The patient, a young woman of 20, had complete occlusion of the nasopharynx so that there was no entrance of air through the nose. She had been operated on when nine years old by a New York surgeon who opened the space, and according to her recollection, removed some bone from the back of the nose. The uvula was bound down and adherent on the posterior wall. This was dissected free and then an angular tonsil separator was pushed up behind the velum and rotated from side to side. The opening was then enlarged by divulsion with a curved tonsil scissors. Large rubber drainage tubes were passed through both nostrils into the oropharynx to keep the surfaces separated during healing. Ulceration of septum necessitated its removal, but not before a fairly satisfactory restoration of breathing and hearing.

DR. J. O. ROE, Rochester: The various causes of palato-pharyngeal adhesions are detailed in my paper but were omitted in the reading because of the time limit. In cases in which there is extensive destruction of tissue and a proportionate amount of contraction of the passages, so long as there is a free opening from the nares down to the adhesion, a suture can be introduced from below, it can be passed from above downward. I have devised a needle for that purpose, mounted on a long slender flexible shaft. The eye of the needle is near the point and is guarded by a shield for protecting the point when the needle is introduced. When the needle is passed down to the adhesion, the shield is drawn back and the needle forced through into the mouth, when the thread is caught and the needle withdrawn, leaving the thread *in situ*. This is repeated on the other side, after which the silver wire is substituted for the thread.

Regarding the plastic flap operation, no matter how much induration there is, if an opening down through the nares can be found for the introduction of a sound to act as a guide for the liberation of the adhesion from below upward, this operation can be performed and is far preferable to the silver wire method in such cases, the latter method being only adapted to cases in which the adhesion is narrow and confined to the border of the palate. When the adhesions are very extensive, forming a mass of cicatricial tissue, I liberate them very freely and sometimes it is advisable to cut away a considerable amount of this cicatricial tissue. Then by making the flap amply large to cover the raw surface and stitching it carefully in place, there need be no fear of not having complete union of the flap in all cases. The flap should be made wide enough to cover about one-half of the surface on each side. The place in the side of the cheek or jaw where it has been found most available for supplying the flap very quickly heals over and is so readily covered by mucous membrane that in a short time scarcely any mark is left, even though the denuded surfaces may have been quite large. The wire does not ulcerate through and there is nothing to cause it to do so. It simply hangs loose in the tissues where introduced until healing has taken place around it. If it should ulcerate through, the operation would be a failure.

SOME GENERAL PRINCIPLES OF DIETETICS, WITH SPECIAL REMARKS ON PROPRIETARY FOODS *

DAVID L. EDSALL, M.D.
PHILADELPHIA

Since the subject which I have been asked to discuss, the general principles of dietetics, is one that, if considered comprehensively, would necessitate an extremely extensive paper, I shall be obliged to confine myself to a few points which seem to me particularly important, especially to teachers, for I know that the latter comprise a large proportion of those present in this Section.

Contrary to the conditions that existed not long ago, when this would have been considered to be well-nigh heresy, it has come in recent years to be an evidence of open-mindedness to dwell on the frequency with which drugs are abused, and as a contrast to the common empiricism in drug therapy to point with gratification to the increasing extent to which the latter is being superseded by rational hygiene and dietetics. The strictures on the use of drugs are occasionally unfair and irrationally sweeping, but I agree that the general trend of this movement is admirable and correct.

Before we adopt too optimistic an attitude in regard to the extent to which the poor use of drugs has been replaced by good methods in diet and hygiene, however, I think that we may do well to determine how largely and how well these latter are actually employed. As a matter of fact, while public hygiene has made great advances and while many valuable details have been added to our knowledge of individual case hygiene and of dietetics, there are many things still to be wished for in the practice of these subjects, some of which, in regard to hygiene, I indicated in a paper that I read before this Section last year. One important reason for the looseness with which they are employed is the fact that the information that we possess in regard to them exists, from a practical standpoint, in very large part in a form that makes it laborious to acquire, so that practitioners can get very little useful working acquaintance with it unless they come gradually to formulate a system for themselves through experience and prolonged study. This means that those who make frequent and confident use of these measures belong to that comparatively small number who have done sufficient study and work in reference to them to permit them to bring into somewhat orderly shape the scattered and fragmentary details learned from various sources and particularly from scattered literature, especially the current literature of the past few years. This is not so true of drugs. It certainly cannot be said that the frequent and confident use of the latter is confined to a few. I need not go into the question whether their less frequent use might not be an advantage, but I may seriously say that many practitioners do actually make skilful use of drugs and that among earnest and intelligent men the distinctions as to skill in this regard are chiefly dependent on differences in personal wisdom and breadth of knowledge rather than on differences in the principles that they apply in using drugs. Be the errors in the customary use of drugs what they may, I think that the intelligent man either possesses or knows how to obtain logical reasons for making his choice in drugs, and the errors that are made with them are dependent more frequently on a widespread habit of using empirical faith than on a lack of means of reaching a rational decision. With hygiene and diet, however, there is very commonly an actual inability to reach a rational preliminary decision as to what general line should be followed.

I have had some interest in learning with what degree of freedom and ease a large number of practitioners, especially recent graduates who have modern training, make use of dietetic measures. I think I am right in saying that a large majority of them believe—and, I imagine, believe rightly—that so far as they are themselves concerned they can accomplish much more with drugs than with diet even in those cases in which they recognize the especial suitability of dietetics. The reason for this is, I think, apparent. They have the means of forming an intelligent judgment in a large proportion of instances regarding the use of any particular drug, while in dietetics, aside from a few conditions such as diabetes, in which specific things can be stated, their knowledge usually consists, on the one hand, of some physiologic facts which have not been presented to them in such a way as to adjust them very clearly to clinical procedures, and, on the other hand, of a more or less considerable mass of practical details which have usually been presented to them almost purely as arbitrary measures and their trend not very well adjusted to the physiologic facts. A decision regarding diet is, therefore, in actual practice usually made in a much more empirical manner than is one in regard to drugs, and it is correspondingly the more likely to be incorrect. Indeed, in dealing with advanced students or even with practitioners who have had no special training in dietetics, I find that they are likely to be unable to give any regulations that could not be equally well or better given by a wise housewife; and the reasons for the regulations that they do give are generally not at all clear, while on the other hand they do very frequently know why they order any particular drug.

The first point to get fixed in our minds, it appears to me, is that, except in rare instances, of which a conspicuous example is diabetes, we do not diet any particular disease by specific means, but we diet disturbances of function which are common to many diseases; that is we employ diet just as we do most drugs. We may often, for example, wisely use precisely the same diet in gastritis, in some stages of gastric ulcer, in some nervous disturbances of the stomach and in various other disorders, since our principle of action here is simply to choose foods that are mechanically, chemically and physiologically unirritating and that do not stimulate the functional activity of the stomach. A common method of writing text-books is simply to describe a special list of articles as especially suitable in each of these conditions. This is, to my mind, quite as irrational a method of teaching as to recommend a particular set of drugs in a particular disease as if they had some especial specific effect in that disease. The rational way of prescribing a diet in these conditions, it appears to me, is to decide through common sense and common knowledge of the physical characters of foods which would be mechanically irritating and which would probably be unirritating in the case at hand and what manner of preparation, if any, would help to avoid this; and to determine which are chemically and physiologically suitable through direct application of the very valuable investigations, such as those done by the Pawlow school particularly, and by Cannon in this country, which have so largely aided rational dietetics; those investigations, that is, that have taught us the influence of protein, fat and carbohydrate

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and of some special members of these classes of nutritive substances on gastric secretion and motility.

In our dietetic regulations in most diseases we start with precisely the same point of view as that just indicated. For instance, we do not diet nephritis as nephritis; we diet simply irritation of the kidney and inadequacy in its excretory function, and we do this by cutting down as far as we can, without damaging general nutrition, those foods that are most irritating to the kidneys through their excretory products, and that demand the greatest amount of functional activity on the part of the kidney; and these, again, we can adjust partly through common sense and partly through physiologic knowledge and without depending on any set list that may be right or may be simply the product of an author's personal idiosyncrasy.

In the second place, we need to look on a very large proportion of patients as needing less a special diet for some particular disorder than instructions as to what a normal diet is. Many persons, of course, damage their health by overindulging themselves at table, in quantity or quality, without producing, for a long time at least, any particular form of disease, and many persons also damage themselves by little or big peculiarities, rather than indulgences, in the use of food or drink, and generally without any comprehension of the harm resident in their peculiarities.

Many undernourished and consequently sickly persons need simply to eat more of the highly nutritious forms of food and less of the innutritious kinds; but they do not know how to choose these themselves successfully, nor does the physician unless he has accurate knowledge of the value of foods. Again, large numbers, particularly of young women of the working classes, but also those of higher station, need, for instance, to eat more breakfast, instead of working the first half of the day during practically an eighteen hours' fast; and there are any number of other peculiarities of eating of all sorts. The only way to discover and correct them is to inquire exactly and in detail into the dietetic habits of the individual, and preferably to get a written statement from him covering several days to a week, and including just what he has eaten and drunk, and how much and at what period of the day.

The third point I would touch on is that we should hold in mind in most instances as the key-note of our success with patients kept on a special diet for any considerable length of time the influence that the diet is having, not simply on the most conspicuous local disorder that the patient exhibits, but on his general nutrition. Many persons improve rapidly as to their local trouble, only to discover soon that the most seriously disordered organ has been relieved at the expense of the general organism, unless this point is carefully watched and guarded against. Indeed, a very large proportion of persons need no special attention paid to particular organs, even though they superficially may seem to, but rather need to be dieted simply for their general undernutrition or overnutrition. This point always demands attention in deciding on the line of diet to be pursued in the beginning and also at each subsequent visit, and it must be determined first by learning whether the individual's weight and general vigor seem normal for him, aside from any disease that may be uncontrollably affecting these, and then subsequently by watching carefully the effect of the diet on weight and vigor. This, simple and patent as it seems, is often not done, and I believe more readily avoidable dietetic errors are made in regard to this point than in any other, many persons complaining that they were made thin and weak and half ill by a diet, while others, though in smaller numbers, are made uncomfortably fat and occasionally seriously obese.

This brings up the next point that I would speak of, namely, that we must have more accurate knowledge than is common in regard to the value of foods and hence in regard to the value of any diet that we are using. Many doctors, if you mention calories to them, indulge in sad lamentation and complaint, or vigorously deny that calories can help any sick person to get well. This is quite as irrational as to deny that there can be any good in knowing and using a suitable dose of strychnin or atropin instead of employing them haphazard in infinitesimal amounts or by the handful, as fancy might happen to dictate. Many and gross errors are committed through not knowing what amount of food is being given; not such serious errors as would result from a wholly unlicensed dosage of poisonous drugs, for foods are not usually directly poisonous, but very serious and very common errors nevertheless, and errors that are very often overlooked because the human organism will stand, and frequently for a long time, very marked degrees of starvation or overfeeding without exhibiting superficially any results that are evidently due to this. I think that most persons who are especially interested in dietetics will say that they have very frequently seen persons starved to a dangerous degree or greatly overfed, especially the former, without its having been recognized that this was being done; and I feel sure that I have several times seen persons unknowingly starved to death under such circumstances, chiefly while under treatment for serious acute disease. Some effort is necessary in order to acquire knowledge of food-values and facility in using them in practice, but most important things in medicine are acquired only through effort. In certain groups of cases it is, to my mind, wholly inexcusable to proceed without precise knowledge of what we are doing, for in these cases at times the patient's life, or at least his health depend more on what we do in diet than on anything else; and we need in such instances not a mere general knowledge that this food is nutritious, that one less so.

If we are to accomplish safe and successful results, we need to know just what we are doing with the same accuracy that we would demand to know whether we were using 1/12 or 1/6 of a grain of morphin with a desperately sick patient. These cases are chiefly those chronic cases in which we must use a diet that differs very largely from the normal cases—that is, of such diseases as diabetes and obesity, and some nephritic and gastrointestinal cases, and various others; also all cases such as those of any severe acute infectious disease, in which the diet is necessarily extremely limited in character and usually fluid and in which unless we choose wisely we may readily order what is essentially starvation.

In most walking cases in which the diet is only moderately regulated, we can trust to the patient's appetite and to observations of his general weight and vigor to see that he gets what he needs, and not much more. In the other types of cases we need to order with clear knowledge and appreciation of food-values if we are to avoid starving him through too great restriction or overfeeding him through too great generosity. A very large proportion of diabetics, for example, are greatly damaged by being told what they must not eat, while no attempt is made to see that their nutritional demands are met by ordering accurately sufficient amounts of the foods that they may take; and the common feeling that obesity is a

very discouraging condition to treat is dependent chiefly on the fact that the diet for the obese is commonly ordered with so little knowledge of its actual value that the result is a mere question of luck, with the odds against success, and the patient is usually given enough to keep him obese or so little that he is made more or less seriously weak or ill and has to relinquish the diet.

The commonest bad results are in the severe acute diseases, and it is in these that I have most frequently seen serious underfeeding, on the one hand, or serious disturbances of digestion and general nutrition, on the other hand, produced by the use of an irrationally large or small amount of total food or of one type of food. Too much fat especially is very frequently given in such cases, though protein and carbohydrate are not uncommonly ordered in too large or too small amounts.

Such errors can be very readily avoided after acquiring a little facility through practice, and with the tables of food-values that are now available in text-books and government publications there is no justification for the old excuse that food-values can be determined only with great difficulty.

It is in cases of the type last under discussion in which great care in diet is needed that proprietary foods have come most largely into use and in which, therefore, their value and limitations in value need most careful consideration. I have no hesitation in saying that proprietary goods have in most particulars depended for whatever success they have had on the fact that so little attention is given to acquiring skill in the use of natural and home-prepared foods. I have even less hesitation in saying that proprietary foods have done much more harm than good, all told; and this is not because they are wholly devoid of value, but is due to the fact that almost all of them have been exploited in such a manner as to exaggerate greatly the worth that they may have, so that instead of their being used rationally and in suitable ways and suitable cases they are ordinarily employed with a grossly hypertrophied idea of their total nutritive qualities, without any clear idea as to what amounts of the different classes of nutritive materials they contain, and, furthermore, often without the slightest notion that nearly all of them have some more or less decided disadvantages, such as a high alcohol content, associated with their use. In many cases these disadvantages are sufficient to make their use wholly undesirable. Personally, while I gladly employ anything as food that I think most suitable, I practically never find it necessary to depend on any proprietary foods and rarely find it desirable to use them at all—and for these reasons:

First, not one of them can be used in amounts sufficient to supply all the nutritive demands of the organism even of a person absolutely at rest. With the liquid foods this is impossible, first, because the alcohol content is, as was shown in an admirable report in THE JOURNAL,[1] so high that if an amount sufficient to meet the nutritive demands were given, almost any patient would be made continuously drunk. Furthermore, it would be only very rarely that a patient could take such an amount of these prepared foods without their becoming quickly repulsive and disturbing to the digestion. In the amounts usually given and in the quantities ordinarily recommended by their exploiters, they provide only a small fraction of the quantity necessary to preserve nutrition. This statement of their limited usefulness and value in nutrition has been vigorously denied by the manufacturers of some of them since the above-mentioned report was published, and beguiling counter-statements regarding their value, that superficially seem somewhat convincing, have been published in advertisements. Any one who has some knowledge of such questions can very quickly see, through a little analysis of these replies, that the counter-arguments are wholly specious and inaccurate.

My second reason for not using them is that, even when they are employed in feasible amounts, they are most unduly expensive and I do not consider it proper to make a patient pay what is in some instances even as much as twenty or more times the amount that he needs to pay in order to get a given quantity of food, unless there is some very good reason for it.

Finally, my third and most important reason is that I do not find patients who cannot take ordinary foods quite as well or better if they are properly prepared and properly chosen. It has been my fortune to treat in the past few years in hospitals an exceptional number of patients with acute infectious disease and I have been especially interested in their diet. I have tried a variety of proprietary foods, and I have never seen that I could not do better with some much cheaper and more natural food, which has usually been milk—sometimes whole milk, sometimes skimmed or diluted or otherwise modified milk, but always, when I employ milk, a milk free from harmful kinds and numbers of bacteria. With an experience of well over a thousand cases of typhoid fever in that time, I am wholly unable to comprehend what physicians mean when they say that typhoid patients cannot take milk without its causing distention or other abdominal disturbance. This usually is undoubtedly due to the fact that those who have had difficulty in employing milk have used an infected milk. If this is avoided it is practically always possible to use milk freely except for very transitory periods during sharp acute digestive disturbances, and in the latter instances digestion needs rest from any except very dilute foods.

The dry proprietary foods I use very little indeed, because I find these also unnecessary, because they likewise are often relatively very expensive; because in amounts that are of much value they tend to disturb digestion; and, finally, because many of them, especially many of the foods for diabetics and dyspeptics, are not by any means what they are advertised to be and are frequently, as may be seen from Winton's analyses, simply frauds. The gross exaggeration in some advertisements of such foods may be seen in the fact that I simply weighed a specimen of a food substitute that is, in advertisements, most energetically lauded for its nutritive value, and found that if all its weight were considered nutritive material (and this, of course, is very generous) it was so light that it would cost $1.25 to $1.50 to buy an amount equal in food value to a five-cent loaf of bread. I frequently find gluten and other similar foods being used under the impression that they are nearly or quite carbohydrate-free. It should become generally known that all but two or three of these are shameful frauds in this particular and most important point. The greater credit, therefore, is due to the few that are honest preparations.

Many of these foods, both the liquid and the solid, have some value. They can be used in certain cases in small amounts to increase somewhat the quantity of food that a patient is getting, thus adding a small proportion more than the patient would otherwise take. In difficult cases it is sometimes valuable and helpful to secure such small increments and especially to increase

1. Medicinal Foods: Report of the Council on Pharmacy and Chemistry of the American Medical Association, THE JOURNAL A. M. A., May 11, 1907, xlviii, 1612.

variety, but even this is in most cases unnecessary—and more than this these foods do not accomplish.

So-called beef extracts and the like I need not touch on further than to point out that, as was shown in a recent bulletin of the Department of Agriculture, most of them have scarcely any food-value. Many of them are essentially devoid of all food-value and practically all are not "beef extracts" or "meat juice" at all. These, more than the other proprietary foods even, have been used with an enormously exaggerated idea of their value, and have done a corresponding amount of harm.

Some manufacturers of these and of the other preparations mentioned evidently believe the statements that they put forth in advertisements. Others quite as clearly know better, but make the statements purely to acquire money. It is a sad commentary on the knowledge of dietetics possessed by many members of our profession that they have so freely accepted these statements and then, with their minds fixed in favor of some of these substances, believe that they have seen clinical results that are absolutely impossible. When one attempts to point out to them facts that are as simple as that two and two make four and not forty, one often meets with the reply, quoted from the exploiters, that because of the peculiar manner of preparation or some peculiar composition or what not of the foods, they are especially nutritious and not to be judged by ordinary standards. This is a mere play on either ignorance or unscientific fancy. There is no basis at all for such statements in many instances; and while at most the manner of preparation and the like may give them a very small fraction of superiority over an equal amount of unprepared food, it is only a small fraction. On the basis of this very slight advantage, it is claimed usually that they have anywhere from two to a thousand times their nutritive value; sometimes even more than a thousand—an infinite number, indeed, for some of them are, so far as we know, devoid of any nutritive value. And yet some of the latter have been used quite as freely as some that have value, simply because they have been well advertised.

1432 Pine Street.

PROPRIETARY AND PREDIGESTED FOODS FROM THE STANDPOINT OF THE PEDIATRIST *

JOHN HOWLAND, M.D.
NEW YORK

The name of the proprietary infants' foods is legion. They are like the rats in Bishop Hatto's tower; "by thousands they come and by myriads and more." No one can remember the names of more than a fraction of them. Many are widely used throughout the civilized world; others have merely a local vogue. We may well seek an answer to the question, What has brought about the general employment of these substances?

Undoubtedly many factors have been operative. One of the chief of these has been the ignorance of the great bulk of the medical profession in regard to the artificial feeding of infants. It was for years and by many considered as a subject little deserving of the serious attention of a trained physician, and the amount of exact knowledge, until comparatively recent years, was pitifully small.

With time came enlightenment but bewildering complexity. With the development of the percentage method of infant-feeding appeared a great number of complicated algebraic formulas by means of which the required amount of the various ingredients, cream, milk and sugar, were to be calculated, a separate formula for each ingredient. Well might the busy general practitioner shrink from the task of puzzling over them. He stood before them as Boussard stood before the trilingual Rosetta stone, realizing that it was the key to much knowledge, but appalled at the task of deciphering it. Especially would a physician in a community where most of the children are breast-fed be apt to turn to a printed direction which relieved him of future responsibility. And, indeed, it might seem not only the easiest but the wisest thing to do, for the extravagant claims attractively presented by the agent who personally seeks him out may be backed up, be it regretfully acknowledged, by the quasi-scientific articles of eminent men, who have sullied their professional reputation that gain might follow.

Another potent cause has been the difficulty in obtaining clean milk fit for an infant's use. Until recent years this has, in the majority of places, been nearly impossible, and a permanent sterile food "guaranteed to contain all the necessary elements of milk" is attractive. The ease of preparation and the fact that ice could be dispensed with have appealed to many as arguments for the employment of proprietary foods. It must not be denied that for use where ice and fresh milk are not obtainable, food unalterable in dried form is a necessity.

The very low fat content of these foods, that which renders them totally unfit for permanent use, has undoubtedly made them of temporary value. The most frequent mistake in artificial feeding with cow's milk is probably overfeeding with fat, and the change to a fat-free prepared food brings about a prompt improvement and also a firm conviction that cow's milk cannot be digested and that this particular food is henceforth necessary.

The laxative maltose which many of the foods contain and which aids in overcoming the constipation troublesome with artificial feeding commends them to many.

These are the factors that have chiefly contributed to the demand for proprietary foods.

Before considering arguments against their use, let us look for a moment at their composition.

They may be roughly divided into those with and those without dried milk; in each of these classes there are some with much unchanged starch, some with the starch partially converted by malt into dextrins and maltose, and some with the starch almost completely converted. In addition, certain other variations have been brought about by adding lactose or cane-sugar or white of egg. One and all, they are very deficient in fat, low in proteins and salts, and they contain large amounts of insoluble and soluble carbohydrates, starch, dextrins, maltose, lactose and saccharose.

There are two chief arguments against their permanent employment: used without milk they fail absolutely; used with milk they are unnecessary. Their composition shows plainly why they are impossible without milk; they are hopelessly deficient in fat and many are so low in proteins as probably to furnish less than the minimum amount of nitrogen required. The mineral content also is unduly low. Rickets is to be expected with them. Absolutely lacking in that very essential but vague quality of freshness, their use is followed in a

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

considerable proportion of cases by scurvy. The instance of the two manufacturers of different foods, advertised to be used without milk, who fed their own infants on their products with resultant scurvy, after which the infants were promptly cured by fresh cow's milk, is known to many. Since that time these foods are advertised to be used only with fresh cow's milk.

As permanent foods with milk they are unnecessary. There can be no doubt that many of them can be used with benefit with cow's milk, but just as satisfactory results can be obtained without them. There is no evidence whatever that they increase in any way the digestibility of cow's milk, and there is no reason why they should. The ingredients that they furnish can be furnished just as satisfactorily by much simpler and more economical means.

In ordinary modified milk the only food element requiring augmentation is the carbohydrate. Whether the addition be made by milk-sugar alone or by milk-sugar and starch, it requires no prepared food to do this. We can obtain any variety of flour and lactose just as easily and far more cheaply.

Many of the proprietary foods (the so-called malted foods) contain a large percentage of maltose. There can be no doubt that maltose is an exceedingly valuable sugar at certain times, and by its use results can be obtained which are almost impossible by other means. Why it acts satisfactorily when other sugars fail is another question to which no one has given a satisfactory answer. The verdict of clinical opinion both here and abroad is that under certain circumstances it accomplishes much, but no one claims that it is to be used permanently or except for clear indication. The pure maltose itself is so expensive as practically to debar it from use, but in solution with dextrins it is a by-product of breweries and may be obtained in a sufficiently pure form for use from many different dealers for an absurdly small sum, about 15 cents a pound.

We should also remember that it is not pure maltose that the proprietary foods contain, but a mixture of dextrins and maltose obtained in the same way by malting starches. Nor do we owe to the manufacturers the knowledge that maltose is valuable or its method of manufacture. Justus von Liebig deserves the credit for this; the manufacturers only appreciated the commercial possibilities.

There is no ground for the supposition that drying and powdering the protein of milk or of egg increases its digestibility or that of the various starches and sugars contained in the food. As to the value of the proteolytic and diastatic ferments, which it is claimed some of the foods contain, something will be said later. It is enough to assert here that the majority do not contain any. In order to preserve these ferments it is necessary to evaporate *in vacuo*. The process is expensive and whether the attempt is actually made or not by actual experiment it is found that there is often no ferment action whatever.

This brings us to a consideration of another of their disadvantages, namely, unreliability. They do not contain what they claim to contain, and their composition varies greatly from time to time, as shown by chemical analysis. A food which one year contained but a small amount of maltose and was, therefore, constipating and was used by numerous physicians after diarrhea for this very constipating action, the next year contained a large amount of maltose and so produced the very effect which it was supposed to correct.

That the manufacturers themselves realize that their products are uneven in composition is shown by the preface to a small pamphlet issued by one of the food companies. I quote from it verbatim:

> The accompanying tables have been compiled from various authorities, much time and trouble having been expended in the search of authorities on the various subjects. The results are published mainly with the view of showing what an unlimited amount of variation may exist in the standards published by different scientists. Some of these variations, such as the discrepancies existing in the table of analysis of infants' foods are incomprehensible and only aid in proving that chemistry is *not* infallible and that practical results go ahead of theoretical indications.

Surely comment on this is unnecessary.

Liebig complained, in 1866, that the manufacturers did not grasp the very kernel of his ideas and gave wrong directions with their foods; and more than thirty years later Keller, who expanded the teaching of Liebig and has done a great service in showing the value of maltose and large quantities of carbohydrates in certain conditions, has complained of his inability to have his malt soup properly prepared.

For temporary use it is difficult to see how these foods are superior in any way to various modifications that can easily be made in any house, and if fresh milk is not obtainable they offer no real advantages over the best brands of condensed milk.

That these foods are harmful or unnecessary is not an isolated personal opinion. It is the almost unanimous belief of those who have studied and written on the subject in this country and in England, and this belief is shared by Czerny and Keller, who, as writers on infants' dietetics, speak with the greatest authority. These latter especially lay stress on the fact that in health or disease proprietary foods are unnecessary.

It is very doubtful if in disease anything more can be accomplished by these foods than by the skilful use of the ordinary foodstuffs. We can obtain at any time practically fat-free milk, gruels of various kinds, all kinds of sugars, mixtures of dextrins and maltose and white of egg; and again be it emphasized, there is no reason why, when clean, these should be more digestible because they have been evaporated, dried and powdered.

I said "skilful use of ordinary foodstuffs," but a certain amount of knowledge and skill is required to use even proprietary foods properly, on account of the great differences in their composition. The man without accurate knowledge of dietetics cannot feed correctly either proprietary or ordinary foods. This subject has been greatly neglected in the past and is only now beginning to receive the attention that it deserves; but it must receive it, for the demand is great. When the medical profession at large acquires a working knowledge of dietetics we may confidently expect that the use of proprietary foods will greatly diminish.

PREDIGESTED MEDICINAL FOODS

There is very little possibility for argument in regard to the predigested medicinal foods, the evidence is so overwhelmingly against their use. They contain peptones and proteoses, cane-sugar, maltose, dextrins and invert sugar in small quantities preserved in alcohol of 14 to 22 per cent. strength.

Let us give these foods the full benefit and consider that all the alcohol and all the extractives that they contain can be utilized by the organism, a hypothesis which is certainly very doubtful. By calculation it is readily shown that, measure for measure, two of the most representative and widely used of these foods have only a

little more than twice the nutritive value of whole milk and less than an equivalent amount of gravity cream—without the alcohol, they contain the same amount of nourishment as milk. The dose of these foods advised for a child of six months is a teaspoonful every four hours. This corresponds in nutritive value to slightly more than two ounces of milk, or slightly less than one ounce of cream in twenty-four hours, and when we consider that this six-months-old infant requires fifteen times as much milk or twelve times as much cream to maintain his body weight one readily sees how far they fall short of furnishing even a minimum amount of food.

Their method of production also consumes time and money worthy of being expended in a better cause. Assuming that such a food could be ingested without grave gastric, intestinal or other disturbance in sufficient quantity to nourish the six-months-old infant, it would cost about a dollar a day and would, moreover, require the child to take in twenty-four hours alcohol equivalent to six ounces of brandy, enough to terminate his short life or keep him in a continuous state of alcoholic coma. No! I think we may avoid without loss the predigested medicinal foods.

FERMENTS IN INFANT-FEEDING

The use of ferments in infant-feeding is confined almost entirely to two, a peptonizing ferment obtained from the pancreas and a diastatic ferment obtained from grain. They have their warm and their lukewarm adherents. There are, I think, no positive opponents except those who hold that their temporary use is unnecessary and their prolonged use apt to lower the infant's digestive power.

Were digestion a simple process and confined to a single ferment for each variety of food, there would be more ground for furnishing this ferment on the supposition that in gastrointestinal disturbance there is a diminution of the enzymes of the alimentary tract. But the process is not a simple one. It involves the interaction of several ferments with the requisite acidity or alkalinity best suited to each one and a proper physical condition in the stomach and intestines. Sufficient time for the action of each enzyme is also necessary.

With proteins it is no doubt true that stomach digestion can almost entirely fail and trypsin digestion be sufficient, but this digestion probably only goes to a certain point and the final breaking down into the amino-acids capable of absorption and utilization appears to be accomplished largely by the erepsin. To be logical we should supply this ferment also. It is doubtful, however, whether there is much of a reduction of the ferments in gastrointestinal disease and whether they are not almost always present in sufficient quantity to accomplish their work, provided other conditions are suitable. Dr. T. Wood Clarke, whose admirable investigation on the gastric digestion of infants in health and disease has just been published, tells me that with infants in whom there was no gastric digestion whatever this was due not to the absence of pepsin, but to the lack of hydrochloric acid, and that if this were supplied to the stomach contents peptic digestion was, in his experience, always prompt.

It is very likely that with intestinal digestion it is the conditions that are at fault and not the enzymes that are deficient. Certainly it is a fact that infants with gastro-enteritis absorb nitrogen from the food to an astonishing degree, almost if not quite as well as those in health. Thus Keller found that from 80 to 95 per cent. of the nitrogen of cow's milk was absorbed by infants with gastrointestinal disease, while healthy breast-fed ones absorbed from 83 to 95 per cent. of the nitrogen. Adler found only a slight increase in the albumins and albumoses of the stools of infants with intestinal disease. There would seem, therefore, very little ground for believing that the proteolytic ferments are much diminished in disease or for supplying more.

Conditions are similar in regard to the amylolytic enzymes, though evidence of the absorption of the products of digestion is more difficult to bring forward.

Jacubowitsch has shown that the sugar-forming enzyme of the intestine is but little interfered with by illness, and Steinitz and Langstein demonstrated that lactase is present in the feces of infants acutely ill, even when there is lactosuria. This would indicate an abnormality of absorption of sugar or some interference with the action of the enzyme, which normally transforms milk-sugar into dextrose, rather than its deficiency. All the proof that we have, therefore, seems to show that ferments are present in sufficient quantity in disease to perform their ordinary functions, but that conditions are not favorable for their activity. The altering of conditions so that ferments may work to their best advantage is quite another matter. I do not wish in any way to deny that in exceptional circumstances, which there is not sufficient time to discuss, ferments may be of value. In the great majority of instances, however, I believe them to be unnecessary.

It is not, I think, a narrow view to take that predigested medicinal foods have no reason for existence, that proprietary infants' foods are unnecessary, and that in pediatrics we can almost entirely dispense with ferments. The propositions are well supported by fact.

49 East Fifty-third Street.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. EDSALL AND HOWLAND

DR. A. JACOBI, New York City: These papers will stand for themselves and will not only be read but should do good work; but from personal experience I know they will not do so much good as they ought to. A good many times similar things have been told the profession and it has not minded them at all. Physicians will lean on the proprietary food and will swallow, singly and wholesale, the manufacturer's statements. That is my experience and there has been no sadder proof to me in my life of the gluttony, mental gluttony, displayed by many physicians, than by their eagerness to believe the men who are not medical men, who are not professional men, who have absolutely no reason for going into that kind of business, except to swell their bank account. I said that thirty years ago and forty years ago and I am at it still, and I do not believe I have made the slightest impression on my good brethren of the medical profession. Yesterday I passed a baby-food store and the man asked me, "Won't you take a specimen?" I said, "I will not take any specimen unless I pay for it." "Won't you take a little memorandum book?" I said, "I have one in my pocket." Then the man said, "Don't you like ours?" I said, "I have been writing against 'baby food' for forty years." With a sort of sheepish friendliness, he said: "Won't you write for us now?" I said, "It will take forty years more."

I believe that some more, and many more, will have to write against proprietary foods for forty years and still some will prescribe them or permit their patients to use them. Many manufacturers know they are robbing the people constantly. The people pay twenty or forty times as much for a proprietary food as it is worth, and although they know the same food can be had as that in the proprietary form at almost no expense. I believe I can only repeat what I said years ago on the same subject. I am sorry that it has to be repeated all

the time, but I am not sorry that men like Edsall and Howland should take the matter up and speak of it in the forcible and scientific way that they have this morning. There is one little point that I might speak about: that is the importance of supplying hydrochloric acid in a great many instances. It is easy enough to do it when necessary. The amount of acid in the stomach and in an adult may be very large and still hydrochloric acid may be required. The acid in the stomach is not always equal. What appears to be hyperacidity credited to hydrochloric acid may consist of fat acids and even in such cases the introduction of hydrochloric acid is required. As a practical measure, it will be advisable to counteract the presence of the fat acids in the stomach by giving an alkali. Either before a meal in order to do away with the fat acid and afterward give hydrochloric acid during or after a meal. The hydrochloric acid may be given in the medicinal way or it may be given in the food, and I still recommend in a number of instances the preparation which I have advised over thirty years ago and which was given to me by my then assistant, who is a good chemist, Dr. Rudisch. That means additional hydrochloric acid to milk in our fat: One part of dilute hydrochloric acid; mix with 250 parts of water; mix with 500 parts of good milk; boil gently. This gives a good preparation, which contains hydrochloric acid and casein in solution. There is never any coagulation. It is digestible, and milk may be given in this way when hydrochloric acid is needed. This mixed milk may be treated as common milk, mixed with cereals. In many children, and in adults, I have given magnesia when there was constipation; giving prepared chalk when the bowels were loose. There is only a single reason why proprietary foods should be given, that is to enrich men who want to be enriched. There is no other reason for putting these preparations on the market. Still we are always repeating the same thing, always giving the money of our poor patients, or rich patients, as the case may be. So far as the latter are concerned, I do not see why their infants should not share in simple and less expensive and more salubrious foods.

DR. G. C. SMITH, Boston: About thirty years ago I heard Dr. Jacobi's teaching and have watched with a great deal of curiosity the development of the dietetic problem as regards children. It is interesting, as well as lamentable, to see that, in face of the fact that so much valuable work has been done by Drs. Edsall, Holt, Rotch and others on the dietetic problems in children, absolutely nothing has been done practically in the matter of the dietetics of adults. Now, it is well known that the two great periods of life in which we do most for our patients are, first, the infectious period, in youth, and, second, the period after 50, in which there are diseases which are often the result of early intoxications and the diseases of infancy, together with luxurious living. At this second period we do nothing in the way of dieting, and we can do much more in that way than by all other means. The chief reason why we have not done more in the matter of dietetics late in life is because the subject has not been taught in medical schools. It seems to me that we should try and give pupils in the undergraduate schools such a training in dietetics that they may go out and treat patients properly, and the postgraduate schools should give to the general practitioners, at least, such a knowledge of dietetics as would guarantee their patients better treatment than they receive with the aid of drugs. During the past twelve or fifteen years I have seen much good accomplished with dietetic treatment, especially in the care of the cardiorenal and the gastrointestinal diseases of late adult life, and I can emphasize particularly one point made by Dr. Edsall, namely, the importance of teaching practitioners and undergraduates the necessity of knowing the value of the different kinds of food which they give, because of the common statement, which I hear made by practitioners, that they can diet their patients by letting them take a little of everything which they desire and they can reduce flesh in that way. That is a very dangerous method. I have often heard physicians say they were reducing their own flesh by slightly diminishing the amount of food they take. This is often harmful also. The physician must know food values. The importance of this knowledge will be illustrated in the first case in which it is applied in active practice. After treating a good many hundred cases of chronic affections, I must say that I have obtained much more satisfaction by adhering strictly to dietetic therapy than by drug treatment.

DR. F. E. STEWART, Philadelphia: Those of us who were interested in the early work of this Section know how difficult it was to get a baker's dozen to meet, but, thanks to the work done by the Council on Pharmacy and Chemistry and the government, we are getting to know more and the membership of the Section is growing. I agree with Dr. Smith that teaching of undergraduates, and especially postgraduates, will solve this problem more than anything else, and this Section can take an active part as it contains a number of the teachers engaged in such work.

DR. C. S. N. HALLBERG, Chicago: While we may agree that the use of digestive ferments *per se* is of little, if any, therapeutic value, they have a great use as pharmaceutical agents in the preparation of predigested food when required. For example, in the administration of peptone, it may be desired to give peptonized beef by rectum, and in that way digestive ferments would be useful. Nurses, for example, should be familiar with the action of the digestive ferments in the preparation of peptonized beef or egg peptone and its use in the preparation of milk. It is well enough to condemn these proprietary infant foods, but what is to take their place? There is a desire for a semiconverted wheat, dextrinated. Now what is to take the place of this? The old Philadelphia salt-bag product is the only thing that I know of and a great many people will not take eight or ten hours to prepare that, and so far as I know there is nothing really to take the place of these preparations which are desired in infant feeding. If preparations similar to this dextrinated flour as made by boiling it for a long time in a salt-bag could be had it would perhaps solve the problem of the expense of infant foods.

DR. GEORGE DOCK, New Orleans: Even in giving food by rectum one can get along without using digestive ferments. I think it is entirely unnecessary to teach nurses to predigest milk in order to use it by enema. For years I have given milk and egg without any predigestion. I am positively certain that as a general thing they are absorbed almost or quite as quickly as peptonized milk, or peptonized beef, and I feel sure, though not scientifically convinced, that a milk and egg mixture or milk alone given by enema is not so irritating as peptonized milk. Dr. Edsall referred several times to diabetes, and I would like to speak of that as a striking example of the slowness which Dr. Jacobi has so touchingly referred to in the assimilation of therapeutic knowledge. Dr. Jacobi is too pessimistic in regard to his teaching. He seems to think that no one has profited by his writings and his teachings. We all know this is not true, that he has many enthusiastic followers. In regard to diabetes, there is a striking example of forgetfulness or indifference, although we have accurate information in regard to underfeeding and the production of acidity, we see a large number of diabetics who have been permitted to go until they are absolutely starved, they have been kept on a carbohydrate free diet so long that they develop toxic symptoms and actually die. An exceedingly sad result of that sort of treatment has repeatedly fallen under my observation. A patient is put on rigid diet and fails visibly. He then puts himself under the care of an osteopath, or some one of that kind, and is told to eat anything he pleases. After a while his improvement is obvious and especially in appearance. The rapid improvement under the quack strikes people; they don't see the later developments of the case, they don't see how the patient again begins to go down and don't see how after the patient is put under rational treatment he makes a much greater improvement, which the quack doctor could never have attained, or at least only by chance. So it seems to me that the absurdity of putting patients on strict diet should be reiterated often. It is easy to demonstrate that the flours for which patients pay anywhere from 50 cents to $1.00 a pound, contain as much starch as ordinary flour, and it is a simple matter to show such patients that they can take just as much flour or potato or other carbohydrate.

DR. B. FANTUS, Chicago: I am sure that we all agree on the necessity of more teaching in dietetics, but it is a very remarkable fact that the recent report on curriculum of the Council on Medical Education of the American Medical Associa-

tion allots only twelve or fourteen hours to the teaching of non-pharmacologic therapeutics, including, as it does, dietetics, hydrotherapy, electrotherapeutics, climatology and a number of other branches. That allowance of time is necessary for the teaching of dietetics alone, and as a great deal of stress is laid on this report, I herewith wish to protest emphatically against this portion of it. I believe the time allotted to non-medicinal therapeutics ought to be, at least, multiplied by five. I have one use for the proprietary foods, and that is when I wish to prescribe no diet. As it happens in the practice of all of us, there are conditions in serious diseases, for instance, in pneumonia, when the patient's digestive power is at the lowest possible ebb, when it is desirable to withhold food; but if the physician does that the patient's relatives will not stand it. They will protest, they will call in consultation, they will do everything under the sun to get this very sick patient fed. In such cases, if they pay $1.00 a bottle for one of the proprietary foods and the patient is fed by the teaspoonful it will have the effect of giving no diet and the relatives will have the satisfaction of thinking that the sick one is getting food.

DR. S. SOLIS COHEN, Philadelphia: The tendency in therapeutics, as in pathology, seems to be to go from one to another extreme of the swing of a very long pendulum. At about the time that I entered on the practice of medicine, the enthusiasm over predigested foods was great. The teaching began in the laboratory and extended to the bedside. Predigested foods were prescribed for anything and everything and were recommended in addresses and articles by some of the same investigators who now find nothing too harsh to say of those who use them. Every one was expected to recover from everything, typhoid, cancer, diabetes and tuberculosis included, if only he got a teaspoonful of predigested food often enough and over a long enough period. Of course, such a mistake corrects itself; but it is equally illogical to go to the other extreme and say that predigested foods are always inapplicable. The fact that digestive ferments cannot climb trees is no reason for saying that the digestive ferments are not, under certain conditions, useful crutches, which can help the lame stomach or intestine over the rough places of the way, and be thrown aside when the necessity for their aid is past. I am convinced by long experience of the usefulness of what I am in the habit of terming pancreatized milk, rather than peptonized milk, that is, diluted milk with soda and pancreatin added before it is given to typhoid patients. This method greatly reduces the size and quantity of the curd passing into the ileum and by that much diminishes the liability to hemorrhage. I am also satisfied that there is less fermentation in the intestine, at least less distention, and thereby also a reduction of the liability to hemorrhage. And so there are many other conditions in which for a definite purpose and for a limited time the predigested food or the administration of a digestive ferment may be useful. My experience has been a little different from Dr. Dock's with predigested milk in rectal feeding. Fully pancreatized predigested milk beaten up with a whole egg and a few grains of pepsin has served me best. Dr. Dock, however, must be aware that in advocating rectal feeding of any kind, he is treading on dangerous ground, imperiling his reputation as a man of science. Certain able investigators have asserted that no food is absorbed from the rectum. Now that statement is, of course, as extreme and as definitely contradicted by the world-wide clinical experience of competent observers as the assertion that digestive ferments are never useful. There are certain times and conditions in which these measures are helpful and others in which they are futile, or even harmful. It is our function as artists in therapeutics, and I always lay stress on the fact that it is our function as practitioners of the art, as well as students of the science of medicine, to determine when they contraindicate the practice under discussion. In that determination we have to be guided by clinical phenomena; interpreting these in the light of all the exact information that laboratory investigations in chemistry and pharmacology, physiology and pathology may give us. I thoroughly agree with Dr. Fantus that there are a number of proprietary foods whose chief value is in feeding the family; and especially so in the case of children with so-called "summer complaints," when it seems to be absolutely impossible otherwise to avoid harmful interference in the nursing. Under such conditions a few drops of a colored fluid called beef juice, given in sterilized water, or whatever medium one chooses to employ, saves trouble and gives the patient a chance to recover. In conclusion, I am very glad to learn that the college in which I have the honor to teach has been so far ahead in medical education. It is more than twenty-three years since I began lecturing in that college, at that time on extra-medicinal or, as I now term it, physiologic therapeutics, and I had a term even then of more than twelve hours. As I no longer hold that position I may add that the work is still done and done well as a part of the regular curriculum of the fourth year class.

DR. WILLIAM H. MERCER, Pittsburg, Pa.: One point that Dr. Smith made is, I think, of great value. He maintained that the general practitioner—I speak from the standpoint of the general practitioner—did not give enough attention to dietetics. The pediatrist does so. I can fully subscribe to this. In this connection I would mention a procedure which for the last four or five years has stood me in very good stead. Every patient who comes to my office is asked to tell me briefly what he eats. I put down his breakfast, his lunch and his dinner. Having this information, and I would like to lay stress on its value, I prescribe a diet. The trouble is not with the patients, they are always asking for dietetic instructions. If the physician knows what they usually eat then he can prescribe a rational diet.

DR. DAVID L. EDSALL, Philadelphia: I consider Dr. Mercer's suggestion an extremely important one. As I said in my paper, I think it still better to put down precisely what the patient eats and the time at which he eats it. Unless this is done the physician forgets many important details. I am strongly in favor of using temporary starvation in bad cases of alimentary disturbance and in cases associated with severe toxemia, such as Bright's disease. But starvation must be employed with full realization that it may be a very dangerous measure unless carefully watched, and I would protest strongly against some of the things that have appeared in the medical literature in recent years, such, for example, as the recommendation that typhoid patients be starved for even as long as ten or twelve days—most pernicious advice, and extremely dangerous. The cases I referred to in which fatal starvation occurred were not diabetes. A qualitative starvation death, so to speak, does occur in diabetes unquestionably, but I referred to direct starvation and was thinking particularly of two typhoid patients who were at death's door from inanition when I first saw them, and who died of this cause, having been fed for weeks on liquid foods that were essentially without any nutritive value. The danger of producing grave acidosis in diabetes is, however, very important. I have repeatedly seen patients become toxic with great rapidity and go quickly into coma because of sudden change of diet. As to ferments in their relation to predigestion of foods, I would note that I have been particularly interested in this question and have done some work on it, but my more mature judgment has led me to such a point that I have not for years ordered peptonized milk or pancreatized milk except in most unusual circumstances and then without any feeling that I could not have accomplished the same purpose in other ways. In regard to rectal alimentation, I would say that I do believe in figures, and I have done some work myself in regard to absorption in rectal alimentation. Many others have also worked on it, and I think it is clear that rectal alimentation accomplishes very little, only from one-fourth to one-sixth the amount necessary to maintain nutritive equilibrium being ordinarily absorbed. The work that has been done on this question has been chiefly when the patients were using predigested food by rectum. It would appear to be reasonably clear that predigestion accomplishes very little in rectal alimentation, because at most very little can be accomplished by this or any other means. Dr. Dock is right, of course, in his statement that if the predigestion is carried far the products will irritate the bowel. As to predigestion in typhoid fever, I can state that simple dietetic measures accomplish just as good results with much less trouble. I had an exceptional opportunity to observe this disease in Philadelphia, and have studied a series of over 4,000 cases of typhoid in about five years in the Episcopal Hospital; of this number I saw personally over one-fourth. Predigested food was used in scarcely any of these cases and yet the num-

ber of hemorrhages and perforations was well below the average of cases as generally reported from hospitals, and the only digestive disturbances that had any relation to milk were due to infected milk. When clean milk was used digestive disorder disappeared. I have been wholly unable to see that predigestion is either necessary or desirable in typhoid fever or similar cases, and the large series of records that I have just spoken of certainly did not indicate any necessity for it.

THE ETHICS OF ANIMAL EXPERIMENTATION *

JAMES ROWLAND ANGELL, A.M.
Head of the Department of Psychology, University of Chicago
CHICAGO

Is man morally justified in causing animals pain, and, if so, under what conditions? This is the moral issue raised by the practice of animal experimentation. The attitude of the average person on this question is no doubt more likely to be determined by temperamental bias and accidental prejudice than by any clear vision of fundamental principles. Nevertheless, it seems worth while in this day of increasingly bitter controversy over the experimental use of animals to inquire somewhat closely into the ethics of the case.

Historically, we find two fundamentally divergent views entertained on the general subject. Most widely prevalent—and sanctioned at one time or another by religious practices among all peoples—is the view that man is the overlord of the animals and may use them for his pleasure and profit, even to the point of robbing them of life. This view undergoes much softening and is hedged about with humanitarian restrictions among the more highly civilized races. Over against this is the belief that man has no right to take animal life or cause animal suffering. Buddhism, with its belief in the transmigration of souls, is the great religious embodiment of this view, although it has perhaps seldom gained a strictly consistent execution in practice. In estimating the import of this radical discrepancy in moral principles, one naturally looks to the origin of moral belief as possibly affording illumination.

Moral principles have generally derived their power over human action from one or more of three distinct sources: (1) They have been accepted as embodying divine law implanted in the consciousness of each individual, or revealed through the inspiration of holy men. This is the intuitive view of morals. (2) They have rested on custom, law, or social and political usage. This is the traditional view. (3) They have been justified by the happiness and social welfare which it is believed follow on obedience to them. This is the scientific view.

Under no one of these conceptions of the origin of morality do we find immediate and unambiguous guidance in the problem of animal experimentation. Religious teaching is equivocal. Certainly most of it sanctions the taking of animal life, and the consciences of primitive people at least seem to cause them no distress, even when they torture dumb creatures. Custom has varied among different races, but, in the main, has undoubtedly favored the treatment of animals in accordance with the unbridled wishes of man. Even among civilized peoples, gelding, dehorning and other mutilations of animals are countenanced under conditions which unquestionably occasion much suffering. At the present time controversy is carried on almost wholly under the ruling conceptions of the third division—i. e., the issue is argued as one of fact concerning the consequences of animal experimentation. In any event, this is the only point at which argument may hope to convince the open-minded, one way or the other. Obviously, the argument from custom proves nothing and convinces nobody. The man who believes in the transmigration of souls between human and animal forms cannot be dealt with in the limits of this paper, but in the Anglo-Saxon world, at least, he is to all intents and purposes non-existent. Certainly the great mass of modern critics of experiments on animals do not rest their case on any such foundation. They assert that needless pain is an unmitigated evil, and that its gratuitous and intentional causation is a sin and a crime. They allege that animal experimentation is (1) not justified by any results it has yet attained and (2) that it is demoralizing and brutalizing in its influence, both on those who conduct it and those who observe it.

Certain more conservative critics urge that, although its occasional employment has resulted in justifying benefits both to man and the animals, it is done far too extensively, is done when the results cannot possibly justify it, and done carelessly and with indecent disregard of all the humanities. Clearly, this is an indictment drawn on alleged facts, and no verdict can be rendered without an examination of the facts.

If it be granted, however, that the experimental procedure is ever justified by its results, the basal ethical issue is closed. It only remains to make sure that in a given case the warrant is certainly adequate, that the minimum of pain is caused the creatures used, and that the indirect effects on the public and on students are not such as to augment the spirit of cruelty or insensitiveness to suffering.

Fortunately, or otherwise, we have no calculus by which we can estimate the amount of pain caused an animal by a given experimental operation, or the amount of suffering saved to other creatures as a possible result of its sacrifice. But with the literally inestimable benefits which are daily being reaped in the prevention of smallpox and in the amelioration or prevention of diphtheria—to mention only these two cases, out of a rapidly lengthening list—it is difficult to understand how any one can honestly frame a sweeping indictment of operations on animals to which these victories and others like them are unquestionably due.

As a matter of fact, the case is somewhat complicated in the public mind by the appearance among the extremer critics of not a few gentlemen who sign themselves M.D., and who claim a professional knowledge of the details of the case. To be sure, the overwhelming majority of medical men, including all the great leaders of the profession and all the great medical organizations, are staunch defenders of animal experimentation.

It would be ridiculous to pretend that all operations on animals have such striking justification, either in purpose or in result, as those which led to the discovery and perfection of vaccine or antitoxin. Many of them frankly fail to result in immediate scientific progress, and many are done for purposes of instruction, the beneficent results of which are always uncertain and frequently long deferred. But, as has been said above, the fundamental ethical issue is closed, once it be granted that there are *any* conditions under which ani-

* This article is one of a series issued in pamphlet form by the Council on Defense of Medical Research of the American Medical Association for circulation among the public. Six of these pamphlets are now ready, taking up the questions of ethics, diagnosis, cancer, vaccination, the live stock industry, tuberculosis, etc. An editorial survey of the series appeared in THE JOURNAL January 1 and a list of the pamphlets, with prices, was given on advertising page 8 of that issue.

mal experimentation is justified. The problem which remains is simply that of determining the circumstances and conditions which warrant particular forms of the method.

Just at this juncture arises a peril which medical men justly fear. Who shall determine what precautions are to be thrown around animal experimentation, who shall be allowed to undertake it, and what circumstances shall be held to justify it? At this point the opportunity opens for unintelligent and officious interference such as might well jeopardize medical advance for a generation to come. It is sincerely to be hoped that sentimental considerations, however honestly intended, will not be allowed to rob those most able to judge wisely and fairly of these matters, of the power of control, which should be in their hands.

When we inquire what, in a practical way, honest and humane people would consider sufficient justification for experimental operations on animals we meet all the vagaries of personal idiosyncrasy. For one, only the saving of human or animal life in large numbers would justify the procedure. For another, adequate reason would be found in a mere lessening of pain, even though the question of death were not involved. For still another, any advance in scientific knowledge which might in the future conceivably conduce to human or animal welfare would afford sufficient justification. Evidently we are here plunged in the waters of casuistry, where it is hopeless to follow. Biologic scientists generally hold the third view mentioned. Probably the rank and file of the lay public would espouse the second view; while a few sensitive souls, especially those of vegetarian proclivities, hold the first view. Finally, in a still smaller group, are those extremists who will hear of nothing but the absolute prevention of animal experimentation.

Those who approve animal experimentation at all, except perhaps men of science, are no doubt moved by the same general motives which lead us to approve whatever is customary and familiar. We harness the horse and force him to work for us, whether he likes it or not. We rob the cow of her calf that we may ourselves enjoy her milk. In like manner we rob the hen of her eggs and think no worse of ourselves for the larceny; and, finally, we wind up our tale of coercion by a ruthless slaughter, for food or sport, of both bird and beast, wild and domesticated alike. With such customs in vogue about us, it is not strange that most persons should lend a willing ear to the defenders of properly controlled experiments on animals. The only wonder is that so many persons have been willing, on imperfect and misleading evidence, to countenance and even endorse the advocacy of repressive measures of the most drastic sort —measures entirely unwarranted when judged by the prevalent practices in the treatment of animals in every other human relation. Not that one would wish to justify a bad practice because other worse ones were in operation. But when one takes a sensational account of the torturing of animals in some surgical laboratory, and judges the case without any regard to an examination of the precautions taken to secure anesthesia for the animal, and without any regard to the prevalent ethical sense concerning the extent to which animals may be sacrificed for human welfare, one obtains a morally distorted and unbalanced point of view, from which no sane judgment can be expected to emanate.

In the main, modern opinion cannot be made to take seriously the view that all animal life should be sacred. As soon as the mosquito was convicted of responsibility for yellow fever and malaria his days among civilized men were numbered. He was always a nuisance. Now he is a homicidal criminal. It may take some time to exterminate him, but he can no longer find any intelligent human defender. Let us hope that the fly will similarly be put under an everlasting ban. Assuredly his responsibility in the matter of typhoid and other filth diseases has been abundantly demonstrated. Poisonous serpents and vermin of all sort have long ceased to enjoy any considerable immunity from slaughter. In a practical way, insects are apt to be thought of as being outside the pale of ordinary humanitarian consideration; but if one is going to inquire seriously into the ethics of our human relations to animal forms, one must recognize that the justification for protecting insect life is neither greater nor less than that for protecting the higher animals, provided any of them menace human welfare. And if interference with their lives be permitted on the ground of human welfare, the avenues are at once open, so far as morality is concerned, to the various forms of operations on animals.

The trend of modern opinion among civilized people is unquestionably toward a more drastic application of the principle of the right of society to protect itself. The criminal is punished not primarily in retribution, but in order that society may not suffer further his evil doings. Temperance legislation, whether wise or not, is designed not only to help the drunkard, but particularly to remove temptation from the path of the innocent. Quarantine is possibly the best illustration of protective social interference with individual freedom. Often the isolation of a patient suffering with contagious disease may operate to endanger his life. But the danger to the community arising from failure to isolate him is commonly adjudged a greater evil. And so at the risk of harm to the patient the community protects itself. How much more, then, for people who assent to the logic of this principle and to its moral justification, should the use of animals seem warranted, when such use can be made widely contributory to the decrease of suffering, both human and animal? Of course, if one entertains the "Christian Scientist" view of the illusive character of pain and disease, all these conclusions fall to the ground. But, on the same principle, there would be no justification for doing away with the mad dog and the venomous serpent. And, in any case, the "Christian Scientist" is not likely to be influenced by any ordinary considerations on this matter, either one way or the other.

Not only is the right of society to protect itself against crime and disease gaining daily a wider recognition, it is also true that the public is coming to a juster appreciation of the relation of science to social welfare. Science has too long masqueraded in the popular mind as a realm of impractical theory, touching the life of the common man only in the most remote way. The contemporary world appreciates increasingly the fallacious character of this view. In industry, in commerce, in medicine, and even in government itself, the scientific knowledge of yesterday is the basis of the practical device of to-day. Science is simply the intellectual aspect of social progress, and, when this conception is still more familiar than it is at present, we shall hear less of the *merely* scientific interest in animal experimentation, as though there were any genuinely scientific interest which could escape contribution to social advance. Certainly, biologic science, quite as well as pure medicine, ought to be given freedom to pursue its researches in the general interests of mankind, with such methods as may commend themselves to investiga-

tors. To obstruct biologic science by a general prohibition of experiments on animals, or to obstruct any other science by proscribing approved methods, is to sin against the light and to turn back the hands of progress. No thoughtful person is likely seriously to commend such a course.

The question as to the moral effect of the practice of animal experimentation on persons who engage in it or observe it is difficult to dispose of effectively. Undoubtedly most persons feel a squeamishness about their first operation on an animal, which later on they lose, and the critic of the practice is likely to interpret this fact as meaning that the practitioner has become callous and indifferent to suffering. I see no reason to deny that this result may occasionally occur. But in every reputable laboratory the usages are as humane as the circumstances will permit, anesthesia is the universal practice, and it is perfectly certain that the total amount of suffering which the animals undergo is negligible in comparison with that which confronts most of them in a state of nature. Moreover, a loss of the original squeamishness is by no means synonymous with a loss of practical tender-heartedness. It may act simply to insure a steadier and prompter hand, with a corresponding decrease in the length of time occupied by the operation and an increased chance of a favorable outcome. It should be remembered, too, that the selfish interests of the operator almost inevitably and invariably make it to his advantage that the animal should suffer as little as possible, in order that its vigor and vitality may be at the maximum. It should also be added that, just as many surgeons are most tender-hearted, despite their apparent indifference to the suffering of their patients, so many men who do a large amount of operating on animals are keenly alive to the welfare of their animals. But even if all experimenters were hardened by their work into a disregard of animal pain, society might still pronounce the value of their results to outweigh this drawback. In the larger view which looks to the ultimate welfare of society as a whole, such men are among its most valuable humanitarian members, whatever their personal attitude toward the animals with which they work.

In conclusion, then, it may be said that we find no obstacle to the practice of animal experimentation in any intuitive moral convictions, nor in the traditional morality of our own race. When we try to estimate its justification in terms of its results, we find that it has precisely the same kind of warrant as that which attaches to all our great social enterprises, in each of which we are ready to sacrifice a lesser good for a greater good, and are willing to encounter a moderate evil in order to escape a greater evil. For the sentimentalist, to whom all thought of gratuitous suffering is abhorrent, probably no argument can ever avail to justify certain forms of experimental procedure. On the other hand, to the man familiar with the revolutionary advances in science and medicine which have originated in the experimental use of animals its condemnation seems the last word of a pernicious insanity. To the great public, representing the intermediary between these extremes, it is to be hoped that a calm and discriminating judgment may be vouchsafed, and one which takes into account all angles of the case. In the long run we have confidence in the integrity of our public judgments on moral issues. In a case so serious as this, we need the highest degree of deliberation, sobriety, and intelligence.

5551 Lexington Avenue.

THE FUNCTIONAL ACTIVITIES OF THE KIDNEYS *

S. WILLIAM SCHAPIRA, M.D.

Instructor in Genitourinary Surgery, Medical Department, Fordham University; Attending Genitourinary Surgeon, Sydenham Hospital and Dispensary, Beth Israel Hospital and Dispensary and New York Post-Graduate

NEW YORK

This article consists of a report of the amount of work which I have done, tending to show the value or the lack of value of the tests which are being used at the present time to show the permeability of the kidney.

My attention was originally called to the value of this work by Dr. Robert Holmes Greene, in 1904. The result of some of the work done by me at that time and for some time subsequent was published in his text-book.[1]

I need hardly mention the various procedures which have been attempted in the past and by which it has been sought to determine the functional activity of the kidney, such as the estimation of the amount of urea, phosphates, chlorides, quantity of urine, cryoscopy, or the presence or absence of casts and albumin.

OLDER TESTS OF RENAL FUNCTION

Thirty-three grams of urea was estimated to be excreted by a healthy individual in twenty-four hours, or about 2 per cent. of the quantity of urine passed, and this has been considered an index of the normal renal function. Urea in the urine is dependent largely on the proteid element of the diet. As is well known, meat diet will increase the elimination of urea and a non-proteid diet will diminish it, but at no time will a non-proteid diet result in the total absence of urea, as a certain quantity of urea is indirectly derived from tissue metabolism. Munzer and Kaufman in 1894 proved that urea was also formed in the liver and to a small extent in other organs. It also seems evident that renal disease may indirectly produce a variable output of urea by increasing or diminishing metabolism or interfering with assimilation. Fever in any renal disease will cause increased metabolism with a corresponding increase in the quantity of urea excreted. Licci[2] states that diminished quantity of urea in renal diseases is entirely due to disturbances of the nitrogenous metabolism, and that renal permeability to urea is increased rather than diminished. The same is corroborated by Maragliano.[3] From such observations as these it is evident that the quantity of urea which comes to the kidney for removal must be a variable one, depending on absorption, tissue metabolism, diet, hepatic and other glandular action, and any of these processes may be affected by disease. All this tends to show that we cannot rely on the inconstant supply of urea to the kidney for elimination in estimating its functional activity.

Neither can we determine the functional activity of the kidneys by the quantitative estimation of chlorids excreted by the kidneys, as it is a well-known fact that a constant content of sodium chlorid is maintained in the tissues and fluids of the body and that its principal supply comes from the food; but we also know that the absorption of sodium chlorid stimulates metabolism whether the kidneys are healthy or diseased. Chlorids are diminished in the urine in fevers to a large extent and increased in the urine when the temperature falls.

* Read before the American Urological Association, Atlantic City, June 7, 1909.

1. Greene, R. H., and Brooks, H.: Diseases of the Genitourinary Organs and the Kidney, Saunders, New York, 1908.
2. Licci: Policlinico, 1901, p. 400.
3. Maragliano: Clin. med. ital., 1902, p. 437.

Mohr[4] has demonstrated that there is an excess of chlorids in the urine in chronic nephritis and that there is a marked decrease of chlorid in acute nephritis. Researches of Albarran[5] tend to show that the quantity of chlorids passed in twenty-four hours does not furnish any indication of the functional activity of the kidney.

The amount of uric acid and phosphates in the urine does not give any reliable information as to the functional activity of the kidney.

When we consider how many factors influence it, the quantity of urine in itself would not be considered as a valuable index to kidney permeability. Work done by Albarran recently, however, has shown that studies of the renal function by the ingestion of large quantities of fluid may be, in certain cases, an index to kidney permeability. At some future time I hope to have the pleasure of presenting my own work recently carried on along this line. I do consider, however, for a rough test, the twenty-four-hour urine with the specific gravity in order to estimate the quantity of solids as of some value in determining chronic kidney disease.

Cryoscopy is determination of the molecular concentration of the urine. This method of von Karonyi is a very ingenious one of determining the functional activity of the kidneys, but von Karonyi himself says that large quantities of water consumed by patients will have a great effect on the freezing-point of the urine, even to diminish it to 1 per cent. or less. Also a very low molecular concentration of the urine will be found in the various forms of anemia. In order to get the best results from this method it is necessary to cryoscope blood and urine both, and, as it takes three drams of blood, it is a test which, while it can be carried out under certain conditions, it will be found impracticable for general use.

It is hardly necessary for me to point out how rapidly the older methods of urinary examinations are passing into disuse. While the presence or absence of casts and albumin may in certain cases bear some relation to the state of the kidney or kidneys, we feel that no such correlation exists at present, as was formerly the generally accepted opinion. That this is true has been very well demonstrated by the work of such able observers as Richard Cabot[6] of Boston, Kapsammer[7] and many others. To be sure, while such factors as albumin and casts may not always be indicative of a diseased state of the kidney, their constant presence in large amounts might indicate some abnormal state of the body.

TECHNIC AND RESULTS OF ELIMINATION TESTS

Having briefly mentioned some of the various methods of estimating the functional activity of the kidney, let us now consider some of those which are being used at the present time in connection with ureter catheterization, and with which I have been experimenting for more than five years. The principle of these methods consists in introducing foreign substances into the human body and noting the time of their elimination by the kidneys. The principle is by no means a new one, as Dr. Hahn in 1820 noticed the odor of violets in the urine after the ingestion of turpentine, and also the absence of the characteristic odor in the urine after eating asparagus in patients suffering from nephritis. My first experiments were with methylene blue and phloridzin; then, three years later, I used indigo carmine. The methylene blue test was introduced by Achard in 1893, in the diagnosis of kidney diseases. Klemperer[8] was the first to apply phloridzin in clinical medicine, in 1896. Achard and Delamere used phloridzin for testing renal function in 1899.

The following is the technic of the tests:

Methylene Blue.—Catheterization of both ureters and intramuscular injection into the gluteal region of 15 minims of a 5 per cent. solution.

Phloridzin.—Catheterization of ureters and subcutaneous injection of 15 minims (1 to 200) freshly prepared.

Indigo Carmine.—Catheterization of ureters and intramuscular injection of 20 c.c of 4 per cent. solution.

I began my experiments with phloridzin and methylene blue in twenty-five perfectly healthy subjects, the experiments being conducted very thoroughly, with the results that the phloridzin gave the sugar reaction in eighteen to twenty-two minutes and the methylene blue tinged the urine in twenty-six to thirty minutes after the injection. After having a standard time for the appearance of the blue and the sugar in the urine in healthy kidneys, I began to apply the same tests to diseased kidneys, and noted the variations in time. The following is a list of kidney diseases in which the tests were conducted:

Interstitial Nephritis.—Twenty-eight cases. Delayed excretion was noticed in twenty-three cases, the two kidneys being alike. In two cases there was a delay in the time limit on the right side; normal time limit on the left. In three cases there was a delay in the time limit on the left side, normal time limit on the right.

Parenchymatous Nephritis.—Nineteen cases. There was a time delay in both kidneys.

Tuberculous Kidneys.—Eight cases. In two there was delay on the right side; normal on the left. In six there was delay on both sides.

Malignant Nephritis.—Four cases. In three cases there was delay on the left side; normal on the right. In one there was delay on the right side; normal on the left.

Calculous Nephritis.—Twenty-one cases. In twelve there was unilateral delay; in nine, delay from both sides.

Hydronephrosis.—Five cases. In four there was a delay from left side and in one from the right kidney.

Pyonephrosis.—Nine cases. In six cases there was delay from the left side; right side normal. In three cases there was delay from the right side; left side normal.

Most of the above cases came with a clinical diagnosis from other physicians.

In applying these tests I found phloridzin to be the most reliable; the time delay of the glycosuria represented the degree of renal inactivity or the degree of structural changes in the kidney.

The methylene blue test, although good in most cases, failed to tinge the urine in three cases after four hours' observation and in two cases of parenchymatous nephritis it tinged the urine in twelve minutes after injection.

I continued my investigations in twenty cases of diseased kidney with indigo carmine and verified it with phloridzin, and while the phloridzin gave the sugar reaction in the proper time, the indigo carmine acted like methylene blue. The indigo carmine usually tinges the urine in about five minutes, which time I take as a standard in testing the functional activity of the kidney, but, as indigo carmine is decolorized by alkaline puru-

4. Mohr: Ztschr. klin. Med., 1904, p. 331.
5. Albarran: Exploration des fonctions rénales, 1905.
6. Cabot, Richard C.: Clinical Examination of Urine; A Critical Study of Common Methods, THE JOURNAL A. M. A., 1905, xliv, 837.
7. Kapsammer: Erkrankungen der Niere, Vienna and Leipsic, 1907, p. 28.
8. Klemperer: Verhandl. d. ver. f. inn. Med. zu Berlin, 1896.

lent urine, we may be misled in the application of this test.

I will not attempt to enumerate the above cases with their histories, but will say that most of them were under observation of skillful physicians who based their diagnosis on the clinical symptoms in connection with urine analysis made in the best laboratories.

Despite the diagnosis, I found by these tests nine subjects of supposed interstitial nephritis, who responded perfectly to the standard time limit of excretion of sugar and also the methylene blue test, and four subjects of supposed parenchymatous nephritis who showed perfect functional activity of the kidneys.

Autopsies were performed in five of the last named cases; ten microscopic sections of each kidney were made and studied carefully. No structural changes of the kidneys were evident, although three of the cases had been diagnosed as parenchymatous nephritis and two as interstitial nephritis during life.

All of the five cases showed by the phloridzin and methylene blue perfect renal activity, in spite of the clinical symptoms and urine analysis.

One of the three patients supposed to have parenchymatous nephritis died from large gumma in the fourth ventricle of the brain, one of pneumonia and one of tetanus.

Of the two patients with supposed interstitial nephritis, one died of pneumonia and the other of abscess of liver. From these facts we can see that we should not place too much reliance on the clinical symptoms and urine analysis in diagnosing kidney diseases.

I have had other cases in which albumin and casts were present in the urine. One very old man, who had been refused life insurance forty-two years before, was examined, with the result that both specimens of urine had the same specific gravity and the same amount of albumin and casts and both tests showed perfect functional activity of the kidneys. In these cases, however, outside the evidence furnished by the urine, there were no clinical manifestations of disease.

I have within the past four years, with the aid of my colleague, Dr. H. J. Friedman, examined 2,200 specimens of urine; the patients had not consulted me as to their kidney condition, but were being treated for various ailments, with the following results: Albumin was found in 85 cases; albumin and casts, in 62 cases; transient diabetes, in 12 cases, and true diabetes, in 9 cases.

Of these 85 patients having albumin only, I tested 40, 38 of whom showed perfect renal function and 2 imperfect. Of the 62 patients with albumin and casts, I tested 20, 12 showed perfect renal function; 8 imperfect.

Very curiously, in four cases of transient diabetes, on catheterization of both ureters I found sugar coming from one kidney, and when the temporary glycosuria had disappeared I tested the kidneys with indigo carmine and phloridzin and found imperfect renal function in the kidney which gave the glycosuria. The explanation of this curious phenomenon I am unable to give.

All nine patients with permanent diabetes were tested. Sugar was found coming from both kidneys and the functional activity of both kidneys was greatly diminished. In one case of permanent diabetes the indigo carmine tinged the urine in one hour and a quarter and the methylene blue in two hours and twelve minutes.

CONCLUSIONS

My studies lead me to the following conclusions:

1. They confirm the views of those who believe that little value can be placed in the presence of casts and albumin alone, as evidence of kidney disease, for my statistics show that one in every fifteen persons walking the streets has albumin or albumin and casts in the urine.

2. The most accurate test for permeability of the kidneys is phloridzin in connection with ureter catheterization, although it is sometimes a very tedious process. Next of importance is the indigo carmine, which is a very quick test, and last, methylene blue.

3. The relationship of transient glycosuria to impaired kidney function when found in one kidney is deserving of study and investigation.

4. These investigations tend to show that the diagnosis of kidney disease by chemical tests and clinical symptoms in most instances is not borne out by the examination with phloridzin, methylene blue and indigo carmine.

64 Rivington Street.

ACQUIRED INTESTINAL DIVERTICULA

GUTHRIE McCONNELL, M.D.
ST. LOUIS

Diverticula of the intestines are without doubt more frequent in occurrence and more important from a clinical standpoint than is generally realized. Although statistics on this matter do not exist to any extent, yet it is evident from the few figures available that this condition is by no means rare.

By diverticula are understood localized dilatations of the intestinal wall. These are naturally subdivided into two varieties, the congenital and the acquired, the former being particularly well recognized. Meckel's diverticulum and the appendix (if it be so regarded) have been studied for many years; their embryology, anatomy, physiology and pathology have been dealt with voluminously. Consequently they will not be discussed here.

It is the acquired variety, however, that is at present attracting much attention, its importance having been understood only within the past few years. This type is supposed to occur toward adult life, as it has not been described as having been found in childhood.

These acquired diverticula might again be subdivided into the true and false, according to whether or not all the layers of the intestinal wall are present. This division does not seem, however, to be of any special value. If any tissue is lacking it is that of the muscular coat, and, as will be shown, this is largely the result of mechanical conditions.

The diverticula are as a rule numerous, varying in number from three or four to several dozen. In size there are the greatest differences, from those of almost microscopic dimensions to others several centimeters in diameter. In the majority of instances they are flask-shaped, the opening into the intestine being less than the diameter of the expanded portion. This construction has a very distinct bearing on the clinical importance of the condition.

The favorite site is at the mesenteric attachment, the dilatation lying between the layers of the mesentery. They do not, however, always occur at that point, as cases have been reported in which they were found along the free border of the intestine.

Although found most commonly in and adjacent to the sigmoid flexure, yet they may occur anywhere along the alimentary tract, beginning with the duodenum.

The walls of these expansions are quite thin and transparent as a result of the stretching of the intestinal coats. Large blood vessels are frequently found coursing over their surfaces, and as a rule the diverticula are filled with intestinal contents, the contents varying according to the portion of the canal involved.

When examined microscopically, it will be seen that the wall of the diverticulum is composed of the same coats as is the intestine. The mucosa, although present, is somewhat thinned and shows no folds. The submucosa is present as a narrow zone, while the muscularis will be found to vary greatly in thickness according to the portion examined. Close to the opening into the intestine the muscular coat will be found of practically normal width. It nevertheless rapidly decreases in thickness until the farthest point of the diverticulum is reached, at which locality the muscle, particularly the outer longitudinal layer, almost disappears. In some instances distinct fenestra have been described as being present in the muscularis.

As to the causation of these diverticula various theories have been advanced. One of these, first mentioned by Grasser,[1] is that there is a distinct area of lessened resistance at that point where the blood vessels pass from the mesentery to the intestine. As the internal pressure increases there is a constant tendency of the wall to give at the above-mentioned area, particularly as the vessels are surrounded by a certain amount of fat-bearing connective tissue. In this way the local dilatations occur. There are though some marked weaknesses in this theory, insomuch that diverticula are found on the convexity of the intestine; also that, if the above were the explanation, muscular tissue would not be found in the wall, which we would expect to consist of mucosa, submucosa and serosa. If diverticula were due to an increase of the internal pressure in the intestine they should be found more frequenty, especially in those cases in which there had been a history of long-continued constipation. Such is not the case. In an article by Beer[2] the question of internal pressure is very fully discussed and it is there shown that such conditions have in all probability very little to do with the matter.

Gordinier and Sampson[3] report one case in which during operative procedure thirteen diverticula were found in the small intestine, all on the mesenteric border. These bore a very definite relation to the larger blood vessels passing from the mesentery to the intestine, as in every instance a large blood vessel extended over the surface of the diverticulum. Apparently, they all consisted of serosa, submucosa and mucosa, the musculature being absent. They were therefore considered as hernial protrusions of the muscosa and submucosa through a weakened spot in the wall of the intestine and beneath the serosa of the mesentery.

The objection to the above case is that there was no microscopic examination made and consequently no proof that the muscularis was absent, it not being possible to detect the presence or absence of the muscle by the naked eye.

Leube, quoted by Brewer,[4] also considers diverticula to be hernias of mucous membranes and says they occur most frequently along the mesenteric border of the bowel.

1. Grasser: München. med. Wchnschr., 1899, No. 22.
2. Beer, E.: Am. Jour. Med. Sc., 1904, cxxviii, 135.
3. Gordinier, H. C., and Sampson, J. A.: Diverticulitis (Not Meckel's) Causing Intestinal Obstruction, THE JOURNAL A. M. A., May 26, 1906, xlvi, 158.
4. Brewer, G. E.: Am. Jour. Med. Sc., 1907, cxxxiv, 482.

Another view is that they are due to an abnormal congenital arrangement of the muscular layers of such a character as to weaken the intestinal wall, thus allowing the localized dilatations to occur. The argument against this is that such conditions have been found in adult life only. It seems hardly probable that such a status could exist for so many years without giving some evidence that would be discovered at autopsies held on the young.

Both Telling[5] and Beer[2] believe this condition to be due to pathologic changes occurring late in life rather than to an abnormal congenital malformation of the muscularis. Schreiber, quoted by Beer, considers them due to a weakness or a deficiency of the muscular tissue. In this relation two cases cited by Thomson[6] are of interest. In these the diverticula were the result of localized disease of the ileum, tuberculosis in the one and possibly cancer in the other.

The clinical importance of this condition, as already stated, is gradually being appreciated and at present there are a number of instances reported in which diverticula have caused serious symptoms.

As has been noted, the diverticula are as a rule flask-shaped, the small end being at the opening into the intestine. This in itself allows the intestinal contents not only to gain access readily but also renders it a matter of difficulty for them to escape after having once entered.

The retention of the materials is encouraged by the fact that the muscular coat, weakened to begin with, has gradually become more atrophic as a result of the entrance of the intestinal contents into the sac, this slight but constant pressure tending further to stretch the muscular wall and consequently to diminish its ability to empty the diverticulum. As the contents remain they tend to become more and more solid until the dilatation is filled with a mass of fecal matter acting in the nature of a foreign body.

This stagnation naturally tends to bring about inflammatory changes of greater or less degree. In the great majority of instances nothing serious ensues, but, as can readily be appreciated, the possibility of dangerous lesions is not remote. As the walls of these diverticula are very thin it is not a matter of difficulty for the inflammatory processes to extend, these changes causing trouble in various ways. Neighboring structures may be involved, adhesions may be formed with consequent obstruction of the intestine or perforation may occur with its concomitant symptoms. These, however, belong more to the realm of surgery and will not be entered into.

The case in connection with these remarks was one in which multiple diverticula of the small intestine were accidentally found at autopsy. The patient was a white woman, seventy years old, suffering from a very extensive epithelioma of the face. When the intestines were examined there were found in the upper part of the ileum, about three feet from the pylorus, about twelve diverticula extending between the layers of the mesentery. These varied greatly in size, from less than 1 cm., to the largest, which was 2 cm. in thickness, 4 cm. in length and protruded 3 cm. beyond the intestinal wall. In all instances the diameter of the opening into the intestine was considerably less than the greatest dimension of the diverticulum. Large blood vessels passed over some portion of the dilatations but the im-

5. Telling, W. H. M.: Brit. Med. Jour., 1908, ii, 1346.
6. Thomson: Brit. Med. Jour., 1908, i, 623.

pression given was that there was no causal relation. All the diverticula were distended with semisolid fecal matter.

The microscopic examination of one of the smaller diverticula showed that the cavity communicated with the intestinal canal by means of a small opening. The inner lining was composed of very thin layer of mucosa which in no place presented any folds. The submucosa was almost completely obliterated, the major part of the wall being formed of circular muscle fibers covered by serosa. The bundles of longitudinal muscle were absent except at the very base of the diverticulum.

The blood vessels in the wall were numerous but small and flattened to a considerable extent. They were all filled with blood.

A few scattered small round cells were visible in the submucosa but not in sufficient numbers to indicate any inflammatory reaction.

The general appearances were such as would suggest that the dilatation was due to the presence of an area in the muscular tissue that was unable to perform its duties. As a result there occurred a gradual distention with the disappearance of the longitudinal muscle and a thinning of the circular fibers, this becoming more marked the larger the localized dilatation.

The conclusions drawn from the examination of the case described above and a review of literature are that acquired diverticula of the intestine appear in late life as a result of localized weakened areas in the muscular tissue.

There does not appear to be sufficient evidence to warrant the assumption that they are due to congenital abnormalities of the muscularis. Such conditions, moreover, have never been reported as having occurred in childhood.

The theory that they are the result of a relaxation of the intestinal wall at the point where the blood vessels enter also does not seem warranted, particularly as they have been found on the convex surface of the bowel and also as their walls contain muscular tissue. This latter should not be present if the diverticula were merely hernial protrusions of the mucosa and the submucosa.

The weakening of the muscular coat in adult life, the theory advocated by Beer and Telling, seems therefore the most reasonable.

THE SYSTEMATIC EXAMINATION OF THE URINE FOR THE RARER ALBUMINOID BODIES

J. E. DALE, M.D.
FORT COLLINS, COLO.

A number of bodies more or less closely resembling serum albumin are at times to be found in the urine, and, while albumin is, of course, always looked for, and the rarer substances resembling it (with the possible exception of nucleo-albumin) are seldom present, yet there can be little question but that even when they are, they are as often overlooked as noted. Of late years the reactions pertaining to this class of rarer bodies have been rendered easily available through collection in standard works, but it would seem that more attention might have been given to plans for a systematic examination of urine for all albuminoid bodies. Great ingenuity has been displayed in devising "tests" by which, if anything but the substance sought is present, the analyst will not find it. The systematic covering of ground that will show something out of the ordinary when such exists, however, has been neglected. This lack of system is unscientific and the methods more complicated than necessary, as it is only requisite to use—in proper order—reactions already well known, to classify on a working basis all recognized albumin-like bodies to be found in the urine.

I have used the following scheme of analysis in the main for the past six years as a matter of routine. No claim for originality is made for any single step; there is nothing but a grouping of well-known reactions, by which the presence of urinary proteins will be detected. It is in no sense a complete scheme of analysis and aims only to classify broadly, leaving the final identification of the substance a matter for full study based on some standard work or works on clinical diagnosis.

Any examination for bodies of this class presupposes chemically pure acetic acid and clear urine; if the urine is turbid and the matter in suspension passes through the filter-paper, it will be well to mix with the urine a small quantity of magnesium carbonate in fine powder, allow the mixture to stand for a few minutes, and then filter; this, with possibly one or more repetitions, will give a clear specimen.

No. 1.—A portion of the clear urine in a test-tube is acidified with acetic acid; a clouding indicates nucleo-albumin. If a precipitate forms, it should be filtered.

No. 2.—A. A portion of the filtrate from No. 1 (or if No. 1 be negative, the clear acidified urine) is added slowly to a portion of a saturated solution of common salt, a precipitate may be any of the following—any albumose (except deutero-albumose), histon or globin.

B. If a precipitate is not formed, the addition of urine is continued until it is in excess of the salt solution; the upper third is shaken and boiled; a clouding indicates serum albumin.

C. If a precipitate is formed, it should be filtered, care being taken that the urine has not been added beyond the point at which it is saturated by the salt solution. The filtrate should be boiled. A clouding indicates serum albumin.

D. If a positive reaction is had in A, it is my practice first to saturate a portion of the original urine with saturated salt solution without adding acetic acid, to determine whether a precipitate is formed in neutral solution, and, second, to determine whether the body present is one of which loosely combined sulphur is a characteristic, using Boston's method.[1] (By this method equal parts of urine and saturated solution of salt, rendered strongly alkaline with potassium hydrate, are boiled in the upper third, and 10 per cent. lead acetate added, drop by drop, while the boiling continues, a heavy black precipitate showing loosely combined sulphur.)

No. 3.—A few drops of the original urine are added, a drop at a time, to a considerable quantity of clear water. Milky streaks in the track of the drops indicate globulin (Roberts' method).

No. 4.—A. A portion of the original urine is acidified with acetic acid and filtered; the filtrate is then rendered faintly alkaline with ammonium hydrate and boiled for a few minutes, then filtered. The filtrate may contain peptone or deutero-albumose.

B. The second filtrate from A is saturated with ammonium sulphate and boiled. A white precipitate indicates deutero-albumose (yellow or brownish ammonium urate).

1. Boston: A Rapid Reaction for Bence-Jones Albumose, Am. Jour. Med. Sc., April, 1903.

C. B is filtered and filtrate examined for peptone; if deutero-albumose has been found, the saturation with ammonium sulphate must be complete and the boiling decided to assure its separation.

The reasons for the steps outlined are:

Of the class of bodies under consideration nucleo-albumin alone is precipitated by acetic acid; hence the step in No. 1.

The remainder of the class with the exception of serum albumin, globulin, deutero-albumose and peptone, are, in the presence of acetic acid, precipitated by the addition of sodium chlorid to saturation. It will be noted that one has as a result of step No. 1 a clear acidified urine, and if this is added slowly to a saturated solution of salt it follows that the conditions of the above proposition are fulfilled, as the salt is present to saturation until urine is added to excess. Among the bodies reacting to this step (No. 2, A) will be found the rarest and most interesting of the entire class.

Saturation with neutral salt precipitates a part of the group only; hence the step in No. 2, D, by which a further subdivision is effected.

Among the bodies giving the sulphur reaction is found the interesting Bence-Jones albumose.

Of the four bodies that may remain in solution after saturating the urine with sodium chlorid in the presence of acetic acid, peptone and deutero-albumose are soluble in hot or cold solution, irrespective of the presence of sodium chlorid or acetic acid. Globulin is held in solution by acetic acid; therefore only serum albumin can be precipitated by heat in No. 2, B and C.

Of the bodies that may be in solution in the original urine, globulin alone will be thrown down by diluting with water; hence the Roberts test.

In No. 4, A, the urine is cleared of possible nucleo-albumin by acetic acid and filtering, neutralized that globulin, if present, may not be carried over, and boiled; deutero-albumose and peptone remain in the filtrate, the deutero-albumose is thrown down by saturating with ammonium sulphate (if present), and removed by filtering, when any remaining protein must be peptone.

The foregoing, no doubt, sounds complicated, but in reality it is not, as in the vast majority of cases nothing, unless it be serum albumin, will be found. Even nucleo-albumin in appreciable amounts is a rarity. In the average case one acidifies a little urine in a test-tube, adds it slowly to some saturated salt solution in another tube (with a negative result in both cases), continues the addition of the urine until it is in excess, shakes and boils in the upper portion, demonstrating serum albumin if present. It takes but a moment more to add a few drops of the filtered urine (original) to water in order to test for globulin, and the analyst has demonstrated that with the possible exception of deutero-albumose or peptone (which he may look for or not, as he sees fit) no albumin-like bodies are present.

On the contrary, if some one of the rarer albuminoids is present, particularly if among the albumoses, it may require considerable work to identify these. The details of such examinations are beyond the scope of the present paper, and must be worked out for the case in hand.

It will be noted that the scheme of analysis proposed is little else than a modification of Purdy's[2] salt and acetic acid test for albumin, but with the order in which the reagents are added reversed, thereby inviting the reactions the original method seeks to obscure.

140 West Oak Street.

2. Purdy: Practical Urinalysis and Urinary Diagnosis.

Therapeutics

SUGGESTIONS FOR THE PHARMACOPEIA OF 1910

USEFUL DRUGS OF THE PHARMACOPEIA OF 1900

OLIVER T. OSBORNE, M.D.
Professor of Materia Medica and Therapeutics, Yale Medical School
NEW HAVEN, CONN.

MINERAL ASTRINGENTS (CONTINUED)

Cerium oxalate is a much over-lauded and over-estimated gastric sedative. It is an insoluble salt, and the powdered drug often contains hard crystals. It is possible that irritation from it may stimulate to normal secretion an anemic stomach. In other words, slight irritation from it would be the only possible reason of its doing any good whatsoever in reflex vomiting in which the mucous membrane of the stomach was anemic. Any other mechanical irritation would do as well. It is a prolonged and perpetuated fallacy to believe that it is a specific in vomiting of pregnancy. Other drugs that are used with it, or the inherent tendency to improve later in the day, or in a few weeks to get over such nausea, is the reason that it has so long been believed to be of value.

As an astringent in inflamed conditions of the mucous membrane of the stomach it is vastly inferior to bismuth preparations, and to be of any value it must be used in doses as large as those used of bismuth preparations, viz., 0.50 to 1.0 gram (7½ to 15 grains). The dose of 0.05 to 0.20 gram (1 to 3 grains) generally prescribed is really absurd, and can only do good psychologically. This drug is not needed in the next Pharmacopeia.

There is no use for lead internally, except possibly as an astringent for the intestines in chronic inflammation, but it is the general belief that other astringents are much better and safer. In other words, probably lead should not be used at all internally. If it is used, acetate of lead is the only preparation given internally, and the dose is 0.065 gram (1 grain). Externally the liquor plumbi subacetatis, well diluted, may be used as a sedative astringent lotion to an inflamed, irritated skin where there are no raw surfaces for absorption. The official liquor plumbi subacetatis dilutus is too weak to be of any value, and should be omitted from the Pharmacopeia, as the liquor plumbi subacetatis may be diluted to meet any strength desired. This is a 25 per cent. solution of lead acetate, and should be diluted, depending on the part to which it is applied, to from 5 to 10 per cent. of it, in water.

There is no need for the iodid of lead, and it should be omitted from the Pharmacopeia. The same is true of lead nitrate and lead oxid.

STOMACHICS

The drugs used to increase the appetite are mostly bitters. While any bitter will cause such stimulation, whether the drug is an alkaloid or one with strong systemic activities, the pure stomachics are generally selected for this purpose, and are what is termed the "simple vegetable bitters." There are too many of such in the Pharmacopeia. Small doses of much-used and well-known drugs are entirely sufficient for the purpose desired.

One of the best of these is the compound tincture of cinchona, in teaspoonful doses, taken with a little water, before meals. If a larger quantity of the bitter is desired, it is well to select an elixir of calisaya, in table-

spoonful doses, in water, before meals. Large quantities of any bitter are not advisable, as it has been shown that, while they stimulate the taking of food, they really inhibit digestion.

Another excellent stomachic is the compound tincture of gentian, in teaspoonful doses, before meals.

Another simple bitter tonic is the tincture of nux vomica, in doses of from 1 to 3 drops, in a wineglass of water, taken before meals. There will be no strychnia stimulation from this small dose of nux vomica, but the bitter is as effective as that of any other stomachic.

Salicin, in small doses, from 0.25 to 0.30 gram (4 or 5 grains), taken before meals, has been considered a good bitter tonic. This has also been supposed to have some slight antirheumatic powers; but, if rheumatism is really present, stronger antirheumatics are needed.

The frequent tonic combination of a capsule containing arsenic, strychnia, iron, and quinin is of value as a bitter tonic, because the quinin is excreted more or less in the saliva, and, by the time for the next meal, food, and especially water drunk, will give a bitter taste in the mouth, and will have all the desired effects of a bitter tonic. The whole four, or any two or three of these drugs in combination, makes a valuable simple tonic, as:

℞.	gm.	
Arseni trioxidi	04	
Strychninæ sulphatis	04	āā, gr. 2/3
Ferri reducti	1	or gr. xv
Quininæ sulphatis	2	gr. xxx

M. et fac capsulas siccas 20.
Sig.: A capsule three times a day, after meals.

It should be remembered that, because a patient has no appetite, is not a positive indication that a bitter tonic before meals is needed, or advisable. If a patient has gastritis, bitter tonics before meals are inadvisable, as such will increase his aversion to food. The inflammation must be first subdued, and he will do better with bismuth and soda before meals as a stomach sedative than with a bitter tonic before meals.

Not a small part of the good effects of the bitter tonic taken before meals is probably due to the stimulation of the alcohol which they contain. In other words, a patient takes, or is given, a cocktail. This little amount of alcohol is probably often of benefit and can do no harm, but to advise a patient, except in rare instances, to take a little whiskey or other alcohol before meals as a stomachic is reprehensible. In the first place, the good that it does is only temporary, and the harm that it may do may be permanent. In the next place, even the amount of alcohol thus taken may be sufficient to inhibit the digestion for hours, although a little alcohol may make the digestion more rapid. A little bitter sipped through a meal, as a little port or stout (and this means a small glass of each), may be in some instances advisable, but the advisability of such treatment should be carefully decided on.

When it is considered that something to stimulate the appetite is needed, as above stated, the presence or absence of gastritis must be determined, and, if present, the loss of appetite must be very differently treated from loss of appetite from an anemic condition of the stomach. It should also be determined whether there is an increase of hydrochloric acid in the stomach or a diminution of it. In the first instance, a regulation of the diet with a more or less complete withdrawal of salt from the food, the administration of plenty of water, and the taking of more oils and fats (cream, butter and olive oil) will improve the condition. If there is a diminished secretion of hydrochloric acid (and many times an increase or diminution may be determined without recourse to the test breakfast), the administration of 5 drops of dilute hydrochloric acid, in one-third of a glass of water, three times a day, after meals, will markedly increase the appetite.

There are a number of other simple bitters which are not needed in the Pharmacopeia. No one of them can do anything in the stomachic line that cannot be done by the drugs and preparations above named. Berberis is not needed; nor is its fluidextract. Calumbo may be omitted as well as its fluidextract and its tincture. Chirata and its fluidextract should not be in the Pharmacopeia.

The multiplicity of useless and needless preparations should be omitted. There is no need of fluidextract of cinchona; and, while speaking of this, it may be stated that there is no need for cinchonin sulphate, and, since quinin has become so cheap, probably cinchonidia is not needed, as it is probably doubtful that when there is idiosynerasy against quinin there is no idiosynerasy against cinchonidia.

Eucalyptus and its fluidextract are not needed. The oil of eucalyptus and eucalyptol will do all, medicinally, that eucalyptus can do either as stomachic, antiseptic, or expectorant.

It seems unnecessary to standardize and load up the Pharmacopeia with crude drugs that are never assayed in drug stores, are rarely found there, and are probably not assayed by pharmaceutical firms. The main object is to have the preparation, the oil of eucalyptus for instance, up to the standard required by the Pharmacopeia, and this is the preparation generally that is found in drug shops. These remarks about eucalyptus are equally true of a large number of the Galenic drugs.

The only use for quassia to-day is as a rectal injection of a fresh infusion when pinworms are present. There is no necessity for the fluidextract of quassia, the tincture of quassia, or the extract of quassia. In fact, the extract of any bitter tonic, for internal administration, defeats the object for which it is administered, as unless the pill or capsule is dissolved in the mouth, the bitter taste is lost, and in the stomach it is inactive. This would render the extract of gentian unnecessary in the Pharmacopeia.

Serpentaria and its fluidextract are not needed. Taraxacum (dandelion) and its extract and fluidextract are certainly not needed. It has no peculiar properties different from any other bitter, and it is probably much inferior to the bitters above recommended.

Hydrastis has no wonderful peculiar healing properties to the mucous membrane of the stomach. It is disagreeable to take, and has nothing to recommend it over other simpler and pleasanter treatments. Externally, on mucous membranes, its fluidextract and its decolorized fluidextract have been used as injections for the urethra, vagina, etc., but its value is doubtful. There is no need for the tincture.

(*To be continued*)

The Humanity of Animal Experimentation.—Millions of animals, birds, and fishes are tortured and slain every year to provide food, clothing, and mere sport for mankind, and the zoophilists say nothing; but when a few hundred or a thousand animals are sacrificed for the sake of knowledge that will save the lives of countless children and avert destructive epidemics, a cry of pain goes up, and the lawmakers are prayed to arrest the progress of medical science. They will not do it, of course, they cannot do it, for the great mass of humanity is sane, but the periodical agitation against animal experimentation is none the less distressing to the lovers of their kind.—*New York Medical Journal.*

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[*For other information see second page following reading matter*]

SATURDAY, JANUARY 15, 1910

THE WASSERMANN REACTION IN PROSTITUTES

The wide-spread influence of syphilis on human pathology was well appreciated before we had the help of serologic methods of diagnosis; but with the added ability to diagnose masked and latent syphilis conferred by the Wassermann method and its modifications, we find that our views of the importance of syphilis were under the mark more often than over.

A somewhat unusual application of the serum reaction is in the study of the occurrence of syphilis in prostitutes, and the results are of much significance. Of one hundred registered prostitutes in Cologne investigated by Dreyer and Meirowsky[1] the presence of syphilis could be established by the history in fifty-six, of whom but one showed manifest lesions at the time of the examination. Among the forty-three remaining who gave neither history nor clinical evidences of syphilis, no less than thirty-two gave a positive serum reaction for syphilis, while forty-five of the fifty-six women known to be infected reacted positively. From this it would seem that, although a very small proportion of prostitutes will show active syphilitic lesions when examined, yet in reality from 83 to 89 per cent. are or have been infected. Furthermore, in this series, of the few that were not syphilitic, none had been registered more than three years, and all but three had been registered for less than a year; this agrees with the experience of Sperk with the registered women of St. Petersburg, that scarcely any of the prostitutes of that city escape syphilis. It would seem doubtful, therefore, if a natural immunity to syphilis often, if ever, exists, since practically every prostitute acquires the disease within the first three years of her exposure.

These observations also emphasize the frequency of lues ignorata, which is known to be especially common in women, since in thirty-two of the eighty-nine positive cases of syphilis no history of its manifestations could be obtained. It is well known that a time comes for each syphilitic when spirochetes are still present which may do the host harm, but which seldom are transmitted to others; and by thousands of observations it has been established that this infectious stage has an average duration of three or four years. This fact must be taken into account in considering the results of syphilis in prostitutes, for it is certain that not all of them transmit infection all the time that they give positive serum reactions. On the other hand, the absence of manifest lesions of syphilis certainly does not prove inability to infect, since but two of the eighty-nine syphilitic women in this group showed lesions on examination. Those physicians who are responsible for examination of prostitutes in communities where legal regulation of prostitutes is established have a difficult task to find the limits of the region of safety in view of such wide boundaries as are offered by the 2 per cent. of women with active lesions and the 83 to 89 per cent. with positive serum reactions; while anyone who is called on to decide the question of fitness of a syphilitic for marriage will find food for reflection in these statistics.

1. Dreyer and Meirowsky: Deutsch. med. Wchnschr., 1909, xxxv, 1698.

A NEW TREATMENT OF SPASTIC PALSIES

Nowhere in neurologic medicine has the physician felt himself more helpless in alleviating human ailments than in the treatment of spastic palsies, especially of children. Once the severe brain injury is induced at birth, rigidity and deformity, and perhaps idiocy, result with more or less certainty. To remedy these effects the general surgeon has endeavored to remove brain clots in infants at the time of meningeal hemorrhage; the pediatrist has striven unequally by hygienic training to ward off the blight of subsequent non-development; and the orthopedist employs various ingenious devices and operations against segmental deformity and palsy. Their efforts have been followed by a measure of success but no great relief, and spasticity especially has always been least relieved. Further, while cutting the motor part of the reflex arc relieves contraction temporarily, it produces complete paralysis of muscles involved. Section of peripheral nerves cuts off both motor and sensory impulses. Even injection of alcohol into isolated nerves (as suggested by Schwab) is found inadequate for the permanent relief of spasticity. The desideratum was a measure which would afford cortical rest and spastic release at the same time.

A new method of treating spastic conditions has recently been devised, namely, resection of the posterior spinal nerve roots. This bids fair to mark a decided advance in neural surgery and is worthy of more than passing notice. It is generally admitted that the degree of muscle tone in an extremity is determined by the sensory impressions from the parts and especially from the muscle spindles. Tonic spasm in a muscle or limb may be regarded as an augmented degree of this state due to various causes. In the cerebral palsies of children there is, as a result of damage and destruction of the superior pyramidal tracts, a twofold motor disturbance in the extremities, namely, both a contraction and a weakness of various muscles. Most of the operations thus far devised for relief of this have been undertaken to restore the proper balance in the lower spinal reflex arc. That there is present in these cases a diminished motor

supply to the muscles and a full sensory influx to the cord seems to be obvious. But why surgeons should have addressed themselves so unanimously to the motor side is not so easily understood. Muscle stretching and fixation, muscle and tendon cutting, muscle transplantation and even neuroplastic operations have all been employed with the object of either weakening the peripheral or heightening the energy of the cortical motor neuron, and never addressed to the sensory side. The long-known fact that the reflexes are lost when tabes supervenes on a pyramidal tract lesion should have paved the way earlier, perhaps, for a solution of the spastic problem in cerebral palsies. It was really pointed out several years ago, by Fraenkel and others, that relief from spasticity was possible from the sensory side. Fraenkel noted that the moderate injection of stovain in the spinal canal in a helpless diplegic boy enabled the patient to walk about for a few minutes during the action of the drug.

Foerster and Tietze[1] of Breslau, however, were the first to add a sensory disorder to an existent motor disease, in order to restore the balance in the lower spinal reflex arc in spastic palsies. Two years ago they resected posterior spinal nerve-roots in five cases of spastic paraplegia. Their work was closely followed by Gottstein[2] in two cases, by Clark and Taylor[3] of New York in three cases, and later by Spiller and Frazier[4] of Philadelphia. The results thus far from these operations have been surprisingly good. Foerster and Tietze, and Gottstein, removing alternate sensory roots in the lumbar enlargement, obtained a lessening of spasticity. Apparently their after-treatment was poor and inefficient for various reasons. In conjunction with the Clark-Taylor operations, Taylor used a unique method of approach to the spinal cord roots, devised by him, namely, unilateral laminectomy. This is a quick and comparatively bloodless operation and affords a good view of the nerve roots and cord. Even the nerve-roots of the opposite side can be easily reached in this operation. Several consecutive roots were cut either in the cervical or lumbar enlargements, depending on the part to be relieved. Data are at hand to show that this operation permanently relieves spasticity. Isolated movements, such as adduction and flexion of the foot, are again possible, and neither atony nor loss of reflexes supervenes. There is evidently need of careful selection of patients for this operation. The relation of spastic and paretic elements should be carefully noted in each case; also the degree of cooperation which the patient can provide, for the important after-treatment of reeducation of muscle movements, hygienic training, etc.

The considerable overlapping in the skin of the segmental supply of individual nerves is shown in a case of Clark and Taylor's in which, after resection of the twelfth dorsal to the fifth lumbar roots, inclusive, no loss in sensation could be detected. It will be interesting to note the effect of sensory root resection in those hemiplegics in whom epilepsy has been superadded. The latter disease ought to undergo modification if the old conception that hemiplegic epilepsies are due to an excess of sensory influx from the periphery is accepted.

All the workers in this special field of neurologic surgery insist on the importance of after-care and training. Myotomies and tenotomies may still be required for contractures, which, of course, are not relieved by removing spasticity. The whole work is novel and unique in neurologic surgery. And while it is hardly beyond the experimental stage, it merits our earnest attention and support, as being the most comprehensive and fundamental conception of spastic palsies and their surgical betterment which has been brought forward in recent years.

1. Foerster and Tietze: Ztschr. f. orthop. Chir., Oct. 22, 1908.
2. Gottstein: Berl. klin. Wchnschr., 1909, No. 17.
3. Clark and Taylor: Paper read at the New York Neurological Society and at the New York Pediatric Society, October, 1909.
4. Spiller and Frazier: Paper read at a joint meeting of the Philadelphia and New York Neurological Societies, December, 1909.

ELECTRIC SLEEP

From time to time articles have appeared in the lay press on the application of electricity for general anesthesia; and the idea has been so novel that naturally it has attracted attention. Though highly colored, these reports have had some basis in the experiments of Stéphane Leduc, professor of physiology in the medical school at Nantes, described more fully in THE JOURNAL, April 6, 1907, page 1221.

Before Leduc's work it had been demonstrated by Erb in 1867 that electric currents could be made to pass into the brain-substance. Erb's work was done on the cadaver, the skull being opened and a small galvanometer placed within the brain; passage of the current invariably deflected the galvanometer. Fritsch and Hitzig later showed the regional excitability of the brain to the current, but it remained for Leduc to demonstrate in 1902 the possibility of the electric penetration of the intact cranial vault. He accomplished this result by means of a wheel interrupter so arranged that it delivered a series of successive shocks, each of one one-thousandth of a second duration, a passive period intervening of nine one-thousandths of a second. In the lower animals he produced with this current an inhibition of the activities of the cerebral centers, leaving the respiratory and circulatory centers intact, thus causing a condition characterized by loss of voluntary movements and the presence of general anesthesia, to which he gave the name "electric sleep."

If a general anesthesia could be safely and readily induced in the human being by the electric current it would seem to have certain advantages over drug narcosis. If the Leduc current could produce readily and invariably a safe general anesthesia, if it could be accurately regulated as to dosage, and if it left no unpleasant sequelæ, it would, indeed, be welcomed in the operating-room.

It was with the purpose of applying the current, if possible, to practical surgical work that Dudley Tait and Raymond Russ[1] began a series of experiments a year ago at the University of California Hospital. Prior to their work the problem had been studied principally from the physiologic point of view by Leduc, whose experiments were subsequently repeated by Robinovitch of New York. Tait and Russ found that in certain instances they could obtain a satisfactory anesthesia in the lower animals, but that the difficulties of manipulation were so many that they did not allow the application of the method in animal experimentation. In dogs they were able to produce, by means of this current, a general analgesia without loss of consciousness; this they tested many times by cutting down on the large nerve trunks and clamping them with hemostatic forceps—the supreme test for analgesia. The method was not without its dangers, and they found that respiration could be easily stopped by a sudden change in current strength or by certain positions of the terminal electrodes.

After trying the action of the current on themselves, they carried out their experiments on others, but in none of the twenty-four trials on man were they able to obtain any phenomena suggestive of sleep. In one man they obtained a general cutaneous analgesia with a very low strength of current. Many experiments were performed to rule out the psychic element which was thought to be present. On one occasion, analgesia having been established, an extensive incision was made for a phlegmon of the hand.

While the applications of this peculiar current as yet have but little practical value, they are not without scientific interest.

MEDICAL EDUCATION IN BRAZIL

It has been generally known that in Spanish-American countries the necessity for maintaining a high standard of professional education in both law and medicine was early appreciated, and that the laws regulating these questions were carefully drawn up. A good preliminary education, sometimes even a university degree, was required for admission to the medical department of universities and five years of the study of medicine demanded, though this was afterward increased in some of the countries to six and even seven years of required medical study. We have known less about the Portuguese portions of America because the language is less familiar to Americans of English descent, as a rule, than Spanish. Some interesting information on this subject has been supplied by the sketch of "The Evolution of Medicine in Brazil," which was read before the Fourth Latin-American Medical Congress, held in Rio de Janeiro last August.[2]

As everywhere else in South America and in Mexico, the first colonists from Europe found a much higher state of medical knowledge among the natives than they expected. It was not long before the educated men who came to Brazil found that the Indians possessed knowledge of drugs, efficient for the cure of the special diseases of the country, which were unknown in Europe. A careful study by missionaries of the various remedies employed by the Indians led to the discovery of several important drugs, including cinchona. Some of the missionary letters and histories contain details as interesting as any we have with regard to corresponding matters in Mexico and other portions of Spanish America. In Rio de Janeiro for several centuries, practical lessons in the care of patients were given in a hospital located on the site now occupied by the Misericordia Hospital.

During the eighteenth century there was very close intercourse between Brazil and the mother country and most of the physicians of Brazil were graduates of the University of Coimbra in Portugal. At the beginning of the nineteenth century a school of surgery was founded at Bahia; and in 1808, with the transfer of the capital from Bahia to Rio Janeiro, a school of anatomy, surgery and medicine was founded in the latter city. The decree of foundation declared that it was for surgeons who did not know anatomy, physiology and medicine, as well as for those who proposed to become physicians. At this time five years of medical studies were required and the candidate had to have a definite amount of preliminary education. Each twenty years thereafter an increase of the required studies was made. In 1832 a law was passed requiring that medical students should know Latin, French or English, philosophy (under which term physics was then included), arithmetic and geometry, and that there should be six years of medical studies. During the first year medical physics, botany and the elements of zoology were studied; during the second year, general and descriptive anatomy, medical chemistry and mineralogy; during the third year, anatomy and physiology; during the fourth year, external and internal pathology, materia medica and pharmacy; during the fifth year, operative medicine, the use of instruments in labor and the diseases of women and of the new-born; and during the sixth year, legal medicine, hygiene and the history of medicine. Clinical surgery and clinical medicine occupied a good many hours during the last three years of the course. In 1854 the departments of the medical school were increased from fourteen to eighteen and in 1882 to twenty-six. In 1891 toxicology and clinical teaching were required by law.

In a word, the medical teaching in Brazil throughout the course of the nineteenth century has maintained a high standard of professional knowledge and has made the Brazilian physicians, as a rule, men of scholarly attainments and thorough training. Dr. Senn noted this high standard in all parts of South America, and particularly in Brazil. From a lack of legal regulation

1. Tait and Russ: Electric Sleep, THE JOURNAL A. M. A., Nov. 13, 1909, p. 1611.
2. Esboco Sobre a Evolucao da Medicina no Brazil, Rio de Janeiro, Imprensa Nacional, 1909.

we missed a corresponding development in the United States and have had to crowd into a short quarter of a century most of our advance. Now that the work has been taken up, however, the reports of what was accomplished in other countries, and American countries particularly, must prove a valuable incentive.

Medical News

DISTRICT OF COLUMBIA

Bust Presented to Smithsonian.—As a memorial of the introduction of anesthetics in surgery, Dr. William James Morton has presented to the Smithsonian Institution a bronze bust of Dr. William T. C. Morton.

Personal.—Dr. W. P. H. Habel, resident physician of Casualty Hospital, has resigned and will locate in West Virginia, and has been succeeded by Dr. Charles J. Boehs.——Dr. Thomas Morgan, Washington, was knocked down by a street car, January 2, sustaining concussion of the brain and lacerations of the scalp.

Tuberculosis League Meets.—At the annual meeting of the District of Columbia Association for the Prevention of Tuberculosis, the following officers were reelected: Brigadier General George M. Sternberg, M. C., U. S. Army, retired, president; Brigadier General William H. Forwood, M. C., U. S. Army, retired, vice-president; and Drs. William C. Rives, E. C. Schroeder, and James D. Morgan, directors.

ILLINOIS

Fire in Hospital.—A fire, December 19, at the Watertown State Hospital, totally destroyed the amusement hall of that institution, causing a loss of about $10,000. No casualties to patients resulted.

Local Medical Society Organized.—The physicians of Cuba have formed an organization and elected Dr. David S. Ray, president, and Dr. Veda C. Murphy, secretary. All of the practitioners of the city have enrolled as members.

Ready to Turn Hospital Over.—The trustees of the Illinois Western Hospital for the Insane, Watertown, met December 30, and made their final reports and arranged details for turning the hospital over to the State Board of Administration.

To Honor Dr. Webster.—A medical science room in the Evanston Public Library has been established by friends of Dr. Edward H. Webster, in his honor. The room will contain the Christopher Library, the Brayton Collection, and the new endowment provides $3,000 for the support of a library on general medicine, and not less than $1,500, the income of which is to be used for the maintenance of the room.

State Hospital Physicians Dismissed.—The State Board of Administration, on January 4, ordered the discharge of Dr. George W. Mitchell, first assistant physician, and Dr. J. G. Oosterbeck, second assistant physician of the Peoria State Hospital, who were charged with negligence in the performance of duty, and who failed to respond to the request of the state civil service commission for their resignation.

New Charities Commission.—The governor on December 31, reappointed Drs. Frank Billings, Chicago, and John T. McAnally, Carbondale, Rev. Emil G. Hirsch, Chicago, and Messrs. John M. Rapp, Fairfield, and John D. Harris, Champaign, members of the State Board of Charities as the new State Charities Commission. At the first meeting of the commission, held January 8, Dr. Frank Billings, Chicago, was elected president, and Mr. William C. Graves, secretary of the old commission, was appointed executive secretary. The secretary was instructed to map out a plan whereby the work of the commission may reach not only the seventeen state charitable institutions, but beyond to every county poor house and jail in the state.

Reappointments.—Under the new board of administration of charities, the following superintendents of charitable institutions have been reappointed: Dr. Vaclav H. Podstata, Elgin State Hospital; Dr. Frank P. Norbury, Kankakee State Hospital; Dr. Henry B. Carriel, Jacksonville State Hospital; Dr. William L. Athon, Anna State Hospital; Dr. Warren E. Taylor, Watertown State Hospital; Dr. George A. Zeller, Peoria State Hospital; Dr. C. P. Henderson, Chester State Hospital, and Dr. Harry G. Hardt, Lincoln School and Colony.

Personal.—Dr. Percy E. Hofmann, Jacksonville, was accidentally shot through the right foot, January 3, while hunting, the injury necessitating amputation.——Dr. W. P. Short, Mason City, ninety-two years of age, is reported to be seriously ill at St. Clara's Hospital, Lincoln.——Dr. Emil Lofgren has been elected president, Dr. Don A. Vanderhoof, vice-president, and Dr. George P. Gill, secretary-treasurer of the staff of St. Anthony's Hospital, Rockford.——Dr. and Mrs. Walter Ryan, Springfield, have left for the east, and will sail in June for Europe, where they expect to remain a year.——Dr. Thomas M. Aderhold, Ziegler, has decided to locate in El Reno, Okla.

New Factory Law in Force.—The new factory law which requires employers to promote the health, comfort, and safety of their employees, went into effect January 1. The law provides for the protection of employees against machine injury, by enclosed hatchways, elevators, etc.; the keeping of premises in clean sanitary condition, of equal temperature; and with toilet facilities, and prohibits the taking of food into rooms where poisonous substances are present; prescribes the removal of poisonous or noxious fumes as far as practicable, and a report to the state factory inspector of all accidents or injuries resulting in death. Failure to comply with any provision of this act is punishable by a fine of from $10 to $50 for the first offense, and from $25 to $200 for the second.

LOUISIANA

Projected School of Tropical Medicine.—A movement is on foot among physicians of New Orleans to establish a school of tropical medicine at Tulane University. The project has as yet taken no definite form, but is said to be endorsed by the president and members of the faculty generally.

Medical Staff Appointed.—At the recent meeting of the board of managers of Touro Infirmary, New Orleans, the following medical staff was appointed: Department of surgery, Dr. Rudolph Matas, senior; and Drs. Albert J. Mayer, Abraham Nelken, Herman B. Gessner, and Lucien H. Landry, juniors; department of gynecology, Dr. William Kohlmann, senior, and Drs. Milton Shlenker, Jacob W. Newman, and Joseph Conn, juniors; department of medicine, Dr. Joseph D. Weis, senior, and Drs. Isaac I. Lemann, Sidney K. Simon, and Charles L. Eshleman, juniors; department of eye, Dr. Marcus Feingold, senior; department of ear, nose and throat, Dr. Charles J. Landfried, senior, and Dr. Arthur I. Weil, junior; department of skin, Dr. Joseph N. Roussel, senior; department of neurology, Dr. Roy M. Van Wart, senior, and Dr. J. T. O'Ferrall, junior; department of pediatrics, Dr. William W. Butterworth, senior, and Dr. L. R. DuBuys, junior; department of radiology, Dr. James B. Guthrie, senior; department of orthopedics, Dr. Paul A. McIlhenny, junior; and department of pathology, Dr. Frazer B. Gurd, junior.

MAINE

Antituberculosis Association Organized.—Bangor has recently formed the Bangor Tuberculosis Association for the prevention of tuberculosis. The president is Henry L. Griffin, and the consulting board of physicians consists of Drs. Galen M. Woodcock, Daniel A. Robinson, William E. Fellows, William C. Mason, Bertram L. Bryant, William C. Peters, Jarvis B. Woods and Harold H. Crane.

Will Pay Part of Debt.—At a special meeting of the trustees of the Maine State Sanatorium, held in Portland, December 29, an offer was made by a gentleman residing out of the state to pay one-fourth of the entire debt of the sanatorium, provided friends of the institution will pay up the balance on or before March 1, 1910. He furthermore offers provided this debt is paid, to place in the hands of the trustees a large endowment fund for the benefit of the sanatorium. The offer was accepted by the trustees and steps are being taken to raise the desired amount.

MARYLAND

Large Bequest to Hospital.—By the will of the late William E. Watts, Funkstown, who died recently in Baltimore, the Washington County Hospital receives an immediate bequest of $20,000 and a residuary legacy of about $40,000.

The Jewish Home for Consumptives.—The Jewish Home for Consumptives, Reisterstown, now has forty beds, all of which are occupied, and a cottage is to be added in the near future which will increase the accommodation to fifty patients.

Personal.—Dr. J. McPherson Scott was elected president of the Hagerstown Fair Association, January 1, and Drs. W. Preston Miller and Richard H. Smith were elected directors.——Dr. George Wells, clerk of Anne Arundel County Circuit Court, is ill with pneumonia at Annapolis.——Dr. R. A. Shankwiler, assistant resident physician at Eudowood San-

atorium, near Baltimore, has resigned to take a similar post at the Antituberculosis Association Sanatorium, Louisville, Ky., and will be succeeded by Dr. Frederick H. Vincup.

Baltimore

Personal.—Dr. Pierce B. Wilson has returned from Europe. ——Dr. Alexander Spear fell from a car January 1, injuring his side and leg.——Dr. C. Hampson Jones, assistant health commissioner, fell on the ice January 5, fracturing a rib.

Additional Accommodation at University Hospital.—The large wing formerly used for a nurses' training school at the University Hospital has been converted into private rooms and wards for maternity patients. One floor is reserved for patients of the Baltimore and Ohio Railroad. By these changes the capacity of the hospital has been increased by about one hundred.

Tuberculosis Nurses at Work.—The nurses authorized by the city council to take up the work against tuberculosis in the health department began their work January 3. The city is divided into fourteen districts and each nurse is given authority to enter houses and enforce the regulations of the health department for the prevention and spread of tuberculosis. Each nurse is equipped with sputum cups, paper napkins, etc., and every physician is required to report cases of tuberculosis that the patients may be visited by the nurses.

MISSOURI

Personal.—Dr. Edward H. Skinner, Kansas City, will return from Europe about the first of next month, and will open his *x*-ray laboratory.——Dr. Kearan C. Cummins, Maryville, was seriously injured by a fall from the roof of his residence, December 24.——Dr. B. Clark Hyde, Kansas City, is ill with typhoid fever.——Dr. Harvey E. Moss, Kansas City, suffered the loss of his office furniture and fixtures in a fire which consumed the Rialto Building, December 23.

Society Meeting.—Audrain County Medical Society, at its annual meeting, December 18, in Mexico, elected Dr. Paul T. Coil, president; Dr. Edwin S. Cave, vice-president; Dr. Robert C. Strode, secretary-treasurer; and Dr. Josiah G. Moore, delegate to the state association, all of Mexico.——At the annual meeting of Greene County Medical Society, held in Springfield, Dr. Thomas Doolin, Ash Grove, was elected president; Dr. David U. Sherman, Springfield, vice-president; Dr. Thomas O. Klinger, Springfield, secretary; and Dr. Dexter B. Farnsworth, Springfield, treasurer.——At the annual meeting of Grand River Medical Society, held in Carrollton, December 15, Dr. John L. Burke, Laclede, was elected president; Dr. Rezin C. Shawhan Hale, vice-president; and Dr. Reuben Barney, Chillicothe, secretary-treasurer.

NEW JERSEY

Health Board Elections.—Dr. Clinton D. Mendenhall has been elected city physician of Bordentown.——Dr. James A. Exton has been reappointed health officer of Kearny.——Dr. G. Herbert Richards has been reelected president of the Orange Board of Health, and Selskar M. Gunn, health officer.

Tuberculosis Report.—The managers of the New Jersey Sanitarium for Tuberculous Disease, at Glen Gardner, submitted a report to the governor, December 30. Cures were effected in 30 per cent. of the cases treated, the disease was arrested in 44 per cent., an improvement was shown in 15, and in only 6 per cent. no progress was made. During the year but one patient died.

Fight to Maintain Preventorium.—Nathan Straus, who established a tuberculosis preventorium at Lakewood, against which bitter warfare has been waged, offered, January 9, to give the preventorium $100,000 cash if it would reestablish the preventorium near Lakewood. He also has declared his intention of continuing at the Cleveland Cottage at Lakewood, at his own expense, the work of saving tenement children from tuberculosis.

NEW YORK

Personal.—Dr. Edward H. Pershing, Lawrence, has succeeded Dr. Louis N. Lanehart, Hempstead, resigned, as a member of the medical board of Nassau Hospital.——Dr. Alexander J. Dallas, said to be the oldest physician in Syracuse, celebrated his ninety-first birthday anniversary, December 31. ——Dr. Samuel R. Olliphant, Mount Vernon, has been chosen president of the local board of health.

State Medical Society Meeting.—The one hundred and third annual meeting of the Medical Society of the State of New York will be held in Albany, January 26 and 27, under the presidency of Dr. Arthur G. Root, Albany. The address on "Modern Hippokrates" will be made by Dr. Abraham Jacobi, New York City. On the evening of the first day a symposium will be held on "Infections of the Middle Ear of Interest to the General Practitioner." On the afternoon of the second day a symposium on fractures will be held, and the annual banquet will occur on the evening of the second day.

Medical Expert Testimony.—The leading medical organizations of this state and many prominent members of the bar have undertaken to have incorporated into the laws of the state a bill to regulate the introduction of medical expert testimony. This same bill was introduced into the assembly in March, 1909, but there was not sufficient time left to give it due consideration and it failed passage at that session. The bill provides that the justices of the supreme court assigned to the appellate division in the several departments should designate a list of physicians and surgeons in each judicial district who may be called as medical expert witnesses by the trial court or by any party to a civil action in any of the courts of this state, and when so called, shall testify and be subject to full cross-examination as other witnesses are. The bill also provides that when so called experts shall receive for their services and attendance such sums as the presiding judge may allow, to be paid at once by the treasurer or other fiscal officer of the county in which the trial is held. It is stated in the bill that nothing in it shall be construed as limiting the right of parties to call other expert witnesses as hithertofore. The proposed measure is intended only to regulate testimony in criminal, not in civil suits.

New York City

For the Italian Hospital.—Enrico Caruso has sent $2,000 to the Italian Benevolent Institute and Hospital in West Houston street. The benefit performance given at the Metropolitan Opera House January 4 for this hospital cleared $6,500.

Harvey Society Lecture.—The fifth lecture of the Harvey Society course delivered by Dr. Ludvig Hektoen of the University of Chicago, January 15, at the New York Academy of Medicine, is on "Certain Phases of the Formation of Antibodies."

New Tuberculosis Exhibit.—The Charity Organization Society has spent both time and money in enlarging and improving the tuberculosis exhibit which won first prize at the International Tuberculosis Congress at Washington and plans to display this exhibit in every district of the city. It has already been shown in the heart of the East Side, in the financial district and on Fifth avenue near Fifty-fifth street. Lectures and demonstrations are given at stated times and the exhibit is open all day.

Personal.—Dr. William H. Nammack, Far Rockaway, and Walter G. Frey, Long Island City, have been appointed coroners physicians of the Queens Board of Coroners.——Dr. Israel L. Feinberg has been appointed president of the board of coroners and Drs. Philip F. O'Hanlon, Albert T. Weston, Otto H. Schultze, and Timothy D. Lahane have been appointed coroners physicians.——Dr. Charles Phelps has retired as police surgeon and with his wife has sailed for Europe.——The emperor of Germany has bestowed the Order of the Prussian Crown on Dr. Otto G. T. Kilian and the medal and ribbon of the Order of the Red Eagle on Drs. Rudolph C. Denig and Louis Peiser, of the staff of the German Hospital.

Buffalo

Still No Contagious Disease Hospital.—Although the Buffalo Academy of Medicine and the Erie County Medical Society have repeatedly called the attention of the civic authorities to the inadequacy of the facilities for the treatment of contagious diseases, no site has as yet been provided for the hospital, for the construction of which $200,000 was voted by the common council fourteen months ago.

Personal.—Drs. Herbert H. Glosser and James H. Carr have returned from Europe.——Drs. Irving M. Snow and Lesser Kauffman have been appointed a committee by the Buffalo Academy of Medicine to inquire into the prevalence of anterior poliomyelitis.——Dr. George A. Sloan has been appointed attending neurologist of the Erie County Hospital, vice Dr. William C. Krauss, deceased.——Drs. James H. Carr, Thew Wright, and Francis M. McGuire have succeeded Drs. Vertner Kenerson, Edward M. Dooley, and Joseph Burke, resigned as attending surgeons at the Emergency Hospital.——Dr. John A. Rafter has been appointed associate editor of the *Buffalo Medical Journal*, vice Dr. William C. Krauss, deceased.

NORTH CAROLINA

Banquet to Dr. Russell.—The medical profession of Charlotte gave an elaborate banquet, December 21, in honor of Dr. E. Reid Russell, who moved from Charlotte to Asheville, January 1.

Society Meetings.—The annual meeting and banquet of Buncombe County Medical Society was held in Asheville, December 21, and the following officers elected: Dr. Charles S. Jordan, president; Dr. Henry H. Briggs, vice-president; Dr. Caillard S. Tennent, secretary (reelected); Dr. Thomas E. W. Brown, treasurer (reelected); Drs. Lewis B. McBrayer and Eugene R. Morris, delegates to the state medical society; Drs. Marshall H. Fletcher and Martin L. Stevens, alternates; and Dr. M. L. Stevens, censor, all of Asheville.——Wake County Medical Society, at its annual meeting, elected the following officers: President, Dr. Richard H. Lewis, Raleigh; vice-president, Dr. Solomon P. Holding, Wake Forest; secretary, Dr. William C. Horton, Raleigh, treasurer; Dr. Kemp P. Battle, Jr., Raleigh; and delegates to the state society, Drs. Albert Anderson, Raleigh, and James J. L. McCullers, McCullers.——Forsyth County Medical Society, at its meeting held in Winston-Salem, December 14, elected Dr. John Bynum, president; Dr. Auron Y. Linville, vice-president, and Dr. Eugene P. Gray, secretary-treasurer, all of Winston-Salem. ——Davidson County Medical Association, at its annual meeting, held in Lexington, elected the following officers: Dr. Willis J. Vestal, Lexington, president; Dr. Charles M. Clodfelter, Lexington, vice-president; Dr. David J. Hill, Lexington, secretary-treasurer; Drs. Charles M. Clodfelter, Lexington, Charles A. Julian, Thomasville, and William Lee Hill, Lexington, censors, and Drs. Joel Hill, Lexington, Eli J. Buchanan, Lexington, and Robert U. Zimmerman, Enterprise, committee on legislation and public health.

OHIO

Food Preservatives.—The Canton Medical Society at a recent meeting, endorsed the action of the American Medical Association in opposing the use of benzoate of soda or other similar chemicals as food preservatives, and adopted a resolution that the Secretary of Agriculture, the Secretary of the Treasury, the Secretary of Commerce and Labor, Dr. Harvey W. Wiley, Food Commissioner Dunlap, the chairman of the Committee on Legislation of the American Medical Association, and Dr. Charles A. L. Reed, Cincinnati, be severally petitioned to cooperate under the law so to amend food inspection decision No. 104 as to prohibit the use of benzoate of soda in any quantity as a food preservative and to declare all foods so preserved as deleterious and fraudulent under the Food and Drugs Act.

Society Meetings.—The sixty-fifth meeting of the Northwestern Ohio District Medical Association was held at Bellefontaine, December 8 and 9, under the presidency of Dr. Thomas Hubbard, Toledo, and the following officers were elected: Dr. Dana O. Weeks, Marion, president; Drs. Don C. Hughes, Findlay, and George M. Todd, Toledo, vice-presidents; Dr. Edwin A. Murbach, Archbold, secretary (reelected), and Dr. Sidney D. Foster, Toledo, assistant secretary and treasurer. The next meeting will be held at Bryan. The association adopted resolutions favoring a national bureau of health. ——At the annual meeting of the Eighth District Medical Association, held in New Lexington, December 2, Dr. William A. Melick, Zanesville, was elected president, and Dr. William E. Wright, Newark, secretary.——Butler County Medical Society, at its annual meeting held in Hamilton, elected the following officers: Dr. George M. Cummins, Hamilton, president; Drs. George D. Lummis, Middletown, William S. Alexander, Oxford, and Clarence C. Wasson, Hamilton, vice-presidents; Dr. Corliss R. Keller, Hamilton, secretary, and Dr. Edward Cook, Hamilton, treasurer.

Personal.—Dr. Charles E. Stadler, West Cairo, was struck by an electric traction car near that town, thrown from his buggy, and painfully injured.——Dr. George R. Love, Toledo, has been reelected superintendent of the Toledo State Hospital.——Dr. W. J. Murphy, Dayton, has been appointed assistant surgeon of the National Soldiers' Home, Leavenworth, Kan.——Dr. Henry Baldwin has resigned from the staff of the Springfield Hospital.——Dr. Joseph H. Huntley, Lima, who recently had his leg amputated as the result of injuries received when his automobile was struck by a train, has recovered.——Dr. Arthur D. Traul, North Robinson, was accidentally shot in the foot while hunting December 4, the injury necessitating amputation of a portion of the foot.—— Dr. Bernhard F. C. Becker has been elected health officer of Toledo, vice Dr. James C. Reinhart, resigned.——Dr. Clarence S. Ramsey has been elected president, Dr. James M. Austin, vice-president, and Dr. Emory F. Davis, secretary-treasurer of the staff of the Springfield Hospital.——Dr. William S. Eakman, Ironton, was thrown from his buggy December 28, and seriously injured.——Dr. Charles F. Gilliam, Columbus, has been appointed superintendent of the Columbus State Hospital.——Dr. Frederick V. Dotterweich, Ashland, has been appointed a member of the local board of pension examiners, vice Dr. David S. Sampsell, deceased.

Cincinnati

New Chair Established.—The Joseph Eichberg chair of physiology in the Ohio-Miami Medical College of the University of Cincinnati was formally established December 11, at a meeting of the board of trustees of the Academy of Medicine. An endowment of $45,000 was raised for this chair by the academy and a few friends of the late Dr. Eichberg, and this sum was duly transferred to the university for the establishment of the professorship.

Personal.—Dr. Mark A. Brown has resigned as health officer of Cincinnati, and has been succeeded by Dr. John H. Landis, formerly in charge of food supplies. Dr. Otis L. Cameron has succeeded Dr. Landis in that position.——Dr. Derrick T. Vail has returned after a trip around the world.——Dr. Stephen B. Marvin has been reelected president and Dr. J. Corliss Evans has been elected a member of the board of education, vice Dr. W. Wilson Barber, deceased.

Post-Graduate School Election.—The Cincinnati Polyclinic and Post-Graduate School, at its annual meeting, December 14, decided to reorganize and enlarge its faculty. The election of officers resulted as follows: Dean, Dr. Charles M. Paul; secretary, Dr. Otto Juettner; treasurer, Dr. Louis J. Krouse; registrar and secretary of the board of trustees, Dr. Stark; director of clinics, Dr. Albert E. Hussey, and president of the board of trustees, Dr. Charles T. Souther.

PENNSYLVANIA

Tuberculosis Work.—The Association for the Study of Tuberculosis distributed 251,300 pieces of literature and treated 24,410 patients at a cost to the state of $1,515,664. The state legislature has appropriated $4,000,000 for the work.

School Medical Inspection.—The State Department of Health has authorized medical inspection of the public schools throughout the rural districts of the state. Hookworm, pellagra and infantile paralysis have been placed on the list of diseases to be reported to the health authorities and public funerals of individuals who have died from measles or whooping cough are prohibited until the house is disinfected.

Philadelphia

Personal.—J. Percy Keating was elected trustee of Jefferson Medical College to fill the vacancy caused by the death of Samuel Thompson last September.——Dr. John McCormack was thrown from his carriage when it collided with a trolley car on January 5, but suffered no serious injury.

University May Take Polyclinic.—A committee has been appointed to prepare plans for a merger of the Polyclinic and the University of Pennsylvania. Dr. John B. Roberts, a member of the board of managers of the Polyclinic Hospital, has been appointed chairman of the new committee. In case that the merger is consummated, the university will use the Polyclinic as a graduate school.

Low Death Rate.—According to the health report for the year 1909, issued January 4, there was a decrease of 1,490 deaths from 1908, despite the increase in population, and more than half of this decrease was in the mortality of children under 5 years. The death rate for the year was 15.87 per 1,000 of population. This is the lowest death rate that the city has ever had and shows an appreciable decrease from 1908 (17.16 per 1,000) though the record of that year was also low. Perhaps the best gain was in the decrease of mortality from typhoid fever. In 1908, the death rate from this fever was 35.5 per 100,000 population, the actual deaths being 533. In 1909 there were but 331 deaths, the rate being 21.1.

College of Physicians Election.—The College of Physicans, January 5, elected the following officers for 1910: President, Dr. George E. de Schweinitz; vice-president, Dr. Wharton Sinkler; censors, Drs. Richard A. Cleeman, S. Weir Mitchell, Louis Starr and Arthur V. Meigs; secretary, Dr. Thomas R. Neilson; treasurer, Dr. Richard H. Harte; honorary librarian, Dr. Frederick P. Henry; councilors, Drs. David L. Edsall and Charles W. Burr; committee on publication, Drs. Gwilym G. Davis, Thompson S. Westcott and William Zentmayer; library committee, Drs. Francis X. Dercum, William J. Taylor, S. Weir Mitchell, Francis R. Packard and George W. Norris; committee on Mutter museum, Drs. George McClellan, Henry Morris and Joseph P. Tunis; hall committee, Drs. John K. Mitchell, Thomas H. Fenton, B. Alexander Randall, E. Hollinsworth Siter and Aloysius O. J. Kelly; and committee on directory of nurses, Drs. James C. Wilson, Wharton Sink-

ler and Thomas G. Ashton.——During the transaction of private business, Dr. S. Weir Mitchell made the following presentations: On behalf of Mrs. Henry C. Chapman, a portrait by Sully of the late Dr. Nathaniel Chapman; on behalf of Hampton L. Carson, Esq., silhouettes of Dr. John Redman, Dr. Samuel Powel Griffitts and Dr. Abraham Chovet; and on behalf of Dr. Henry D. Jump, a gold watch formerly belonging to the late Dr. D. Hayes Agnew.——The Section on Otology and Laryngology of the College of Physicians of Philadelphia, at its last meeting, reelected Dr. Arthur W. Watson, chairman, and Dr. Ralph Butler, clerk.

VIRGINIA

Postgraduate School.—Drs. J. Shelton Horsley, William A. Shepherd, and Emmett H. Terrell have arranged to establish a postgraduate surgical school in Richmond, the courses in which will include clinical and experimental surgery and surgical pathology. The course will begin about the middle of February and each class will be limited to four students.

Personal.—Captain Lawrence T. Price, Richmond, battalion surgeon of the First Battalion, First Infantry, N. G. Va., has been elected major.——Dr. Leroy L. Sawyer, Great Bridge, has been reelected physician to the Norfolk County almshouse, and Dr. Robert L. Corbell, Port Norfolk, health officer. Dr. Herbert R. Drewry, Norfolk, has been appointed assistant health officer.——Dr. William J. Chewning, Fredericksburg, is reported to be ill at his home.——Dr. Thomas O. Jones, Harrisonburg, was stricken with cerebral hemorrhage recently.

State Board Notes.—Enough antitoxin for 400 cases of diphtheria was dispensed through the state health department to the physicians of the state during November.——Arrangements have recently been perfected which will render available the diagnosis and treatment of rabies at a nominal expense to the people of the state. The director of the Pasteur Institute of Virginia will examine for rabies dogs' heads sent by physicians of the state free of charge. The hygienic laboratory of the U. S. P. H. and M.-H. Service, Washington, will also make examinations gratis.

College of Medicine Destroyed by Fire.—On the morning of January 6, while the city was covered with ice, the building of the University College of Medicine, Richmond, was completely destroyed by fire, the origin of which is unknown, with a loss estimated at $130,000. Fortunately the fire did not reach the office of the institution and its records were preserved. The Virginia Hospital immediately adjoining, was saved, the only damage being that occasioned by smoke and water on the east wing, known as the Hunter McGuire Annex, nearest the burning building. Pending this renovation the clinical amphitheater and its accessories are put out of commission for a period of about a week only. The part of the building occupied by private patients was in no way damaged, and the work of the hospital with its private operating rooms has not been interrupted. Lectures were regularly resumed in 24 hours in neighboring halls generously tendered by other collegiate institutions. Through the kindness of the Medical College of Virginia its laboratories are being used, and thus only an interruption of two or three days has been occasioned in this part of the course.

WISCONSIN

Tuberculosis Dispensary Opened.—The third dispensary for tuberculosis was opened by the Milwaukee Society for the Care of the Sick, December 15. It is located in the College of Physicians and Surgeons, and is to be opened Wednesday evenings and Monday mornings.

To Guard Health of Students.—In addition to Dr. Joseph Evans, Philadelphia, who has been made supervisor of medical attendants of all students at the University of Wisconsin, Madison, two other physicians are engaged in this duty, Dr. James C. Elsom, medical examiner of the men's gymnasium, and Dr. J. Helen Dobson, who holds a similar position in the woman's gymnasium.

Graduate Study.—At the meeting of Marathon County Medical Society, in Warsaw, December 27, the postgraduate plan of study suggested by the American Medical Association was adopted.——The Outagamie County Medical Society, at its meeting in Kaukana, January 4, decided to prepare at once for the holding of meetings for postgraduate study along standard lines.——Janesville Postgraduate Medical Society was organized January 3 in Janesville.

Societies Elect Officers.—The Milwaukee County Medical Society, at its annual meeting, December 10, elected the following officers: President, Dr. Louis F. Jermain; vice-president, Dr. William A. Batchelor; secretary, Dr. Daniel Hopkinson; treasurer, Dr. Joseph Kahn (reelected), and censor, Dr. Alfred W. Gray.——At a meeting of physicians of Neenah and Menasha, held December 28, in Neenah, the Twin City Medical Club was organized with Dr. James R. Barnett, Neenah, as president.

Personal.—Dr. John B. Trowbridge, Hayward, was operated on in Rochester, Minn., December 15, for tumor of abdomen.——Dr. Charles H. Sutherland, Janesville, has been appointed a member of the State Board of Health, vice Dr. Quincy O. Sutherland, deceased.——Dr. Chester M. Echols has succeeded Dr. Thomas Fitzgibbon as professor of gynecology in the Medical Department of Marquette University. Dr. Fitzgibbon has been made emeritus professor.——Dr. Mazyck P. Ravenel served as one of the twelve members of the International Commission for the Control of Bovine Tuberculosis, which held its first meeting, December 13, in Buffalo.

GENERAL NEWS AND COMMENT

Diploma Stolen.—The State Board of Health of Illinois has sent out a notification that about Dec. 20, 1909, a thief stole the diploma of Dr. Daniel Lichty, Rockford, Ill. It is assumed that the thief intended to use or to sell the diploma and that Dr. Lichty's name will be erased. The diploma was issued by the Chicago Medical College, March 14, 1871.

New Dress for *Lancet-Clinic*.—The *Lancet-Clinic*, Cincinnati, begins the new year in an enlarged form and entirely new style and dress. It now conforms in size to the other weekly medical journals. Its new form is attractive. The arrangement of the matter is also changed, and the editorials, weekly news and comments are in front of the contributed articles and miscellaneous matter. The first number of the year is an especially interesting one. The new and enlarged form should please its readers and help to extend its already wide field of usefulness. The *Lancet-Clinic* is to be congratulated on its prosperity, and it has the best wishes of THE JOURNAL for continued success.

Meeting of the Far-Eastern Association of Tropical Medicine.—The first biennial meeting of this association is to be held in Manila, March 5-14, 1910. The association was established with the idea of bringing together workers in tropical medicine in that part of the world, and is important in that it brings English-speaking scientific workers together for mutual social and scientific improvement. The sessions in Manila will be held in the new building of the Philippine Medical School near the Bureau of Science and the new Government Hospital. The sessions in Baguio will be held in one of the government buildings. The government has appropriated a liberal sum for entertainment of guests during the meeting. Visits have been arranged to points of interest in the neighborhood. The museums of the Bureau of Science and of the Philippine Medical School will be thrown open and demonstrations of the specimens will be given. There will be a commercial exhibit of remedial agents, appliances and medical equipment appropriate for use in the tropics.

A Labordinized Pharmacopeia.—Congressman H. M. Coudrey of Missouri has introduced a bill whose alleged purpose is to have the United States Government edit and publish the Pharmacopeia. We have not succeeded in getting a copy of the bill so that it is not possible to discuss it in detail. This is not necessary, however. Readers of THE JOURNAL may remember that the Hon. H. M. Coudrey has previously been referred to in his capacity as president of the Labordine Pharmacal Company of St. Louis. Labordine, it will be further remembered, was, previous to the Food and Drugs Act, a "purely vegetable cardiac stimulant" which should be given preference over other antipyretics so as to "avoid acetanilid poisoning." Examination in the Association's laboratory showed Labordine to contain nearly 40 per cent. acetanilid—a result which the makers of the nostrum had to acknowledge after the Food and Drugs Act made it expensive to lie on the label. Those interested will find our writeup of the matter in THE JOURNAL of March 30, 1907. What the particular "joker" is in the bill thus introduced by a man whose various activities as an insurance agent, politician and "patent medicine" promoter so peculiarly fit him to pass on such an intricate subject as the revision of the Pharmacopeia, we cannot say. That there is a "joker"—or many of them—we do not doubt, any more than we think that revision of the Pharmacopeia by the "patent medicine" interests or their tools would further the best interests of the public, of the medical profession, or of scientific pharmacy.

FOREIGN

Spanish Congress for Laryngology.—The third national congress for laryngology will be held next April at Seville and will be the occasion for an ovation to the leading Spanish

laryngologist, Prof. Don Ramon de la Sota y Lastra on the fiftieth anniversary of his professional career.

Antialcohol Work in Sweden.—In 1908 it was decreed that one-tenth of the government revenue from the liquor trade should be devoted to antialcohol agitation. The sum amounted in 1909 to nearly $50,000, part of which was appropriated for lectures for teachers on the evils of alcohol, and part was given to the Swedish Total Abstinence Medical Society for its special work in this line.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Dec. 24, 1909.

Munificent Gift for Medical Research

The late Mr. Alfred Beit, a South African millionaire, left $250,000 to the University of London to found an "Institute of the Medical Sciences." As the formation of this institute has for various reasons become impossible, his brother, Mr. Otto Beit, has decided to increase the sum to $1,075,000, so as to yield an annual income of $37,500 for "The Beit Memorial Fellowships for Medical Research." A sum of $1,250 a year for three years is to be granted to "any man or woman of European descent, graduate of any approved university within the British Empire, who is elected to a fellowship." The first election of fellows will take place on or before March 1, 1910. Not more than ten will be elected. The object is to promote the advancement by means of research, of medicine and the allied sciences in their relation to medicine. The fund will be administered by a board of trustees who in turn will be assisted by an advisory board of some of the most eminent physicians and physiologists in this country—Professors Clifford Allbutt, Osler, Rose Bradford, Martin and Starling. In the election of fellows the board will take into account not only the personal record of the candidates but also the importance of the research work proposed by them. Those who are elected fellows are expected to devote the whole of their time at an authorized laboratory. The list of authorized institutions where the research may be carried on covers a wide range. Provision is made for every branch of medicine, general and special, and for all the preliminary and auxiliary sciences. Thus chemistry, physics and general biology may be studied, taken up in the laboratories of the University and King's College, as well as anatomy, physiology, pharmacology and hygiene. Among the advanced and specialized studies for which provision is made are the following: Cancer, at the laboratories of the Imperial Cancer Research and Middlesex Hospitals; tuberculosis, at the laboratories of the royal commission and King Edward Sanatorium; tropical medicine, at the London and Liverpool schools; preventive medicine, at the Lister Institute and the Royal Institute of Public Health; mental disease, at the London county council laboratories at Claybury; naval medicine, at Haslar; military medicine, at the Army College, Millbank. Fellows must furnish a detailed statement of their work at the end of each year and their tenure may be cut short if their work does not justify their retention; on the other hand in suitable cases the tenure may be extended to 4 years.

Research scholarships are of course well-known in this country but this scheme for the promotion of medical research is unique in its magnitude. In recent years large endowments have been devoted to the erection and equipment of institutions and the maintenance of professorships. It seems that Mr. Beit and his advisers have determined to strike out a new line of endowment and provide for the devotion of picked students to medical research. The scheme is excellent in its object and the rules, on the whole, are good. But there is room for some criticism. The true researcher is born rather than made and a man capable of original work may for some reason not have a university degree, while the man who has attained the highest university honors is often wanting in originality. Again, it seems strange in this enlightened age, in this empire which includes so many Asiatic and other races, and in this metropolis to which men of every color come for purposes of study to exclude those who are not of European descent. Science has no frontiers and should not tolerate such a narrow-minded restriction.

Government Ceasing to Maintain Hospitals in Australia

Until the present year the whole of the hospitals in Australia have been supported by the government. The annual expenditure amounts to $500,000. It is now proposed that the management of hospitals shall be vested in local committees and that the government will only partly support them by annual subsidies. Thus to the Perth Hospital, which costs $90,000 to maintain, they will grant $65,000. The public will have to find the balance or the hospital will be reduced so as to work within the limits of the grant.

Curious Case of Chloroform Poisoning

In cases of death from drinking chloroform it has been contended that this substance is such a pungent liquid that it is extremely improbable that any one would drink it accidentally. A case is reported from Sheffield in which a child, aged 5 years, lost its life in this way. The wife of a collier procured for the relief of toothache a bottle of chloroform which she left on a mantelpiece. Early in the morning two children managed to obtain the bottle. The elder, a boy aged 8, drank some of the contents and also gave some to the younger, a girl aged 5 years, who cried for it. The girl became drowsy some hours later and a doctor was called too late.

A Physician's Bravery

The medal of the Royal Humane Society has been conferred on Dr. Leonard W. Oliver of Hampshire for an act of bravery. A man descended into a large cesspit which was being cleared out and was at once overcome by the gases at the bottom. Another man descended to help him and was similarly overcome and fell. An alarm was raised and the physician was called. He burned straw in order to get rid of the gases and then prepared to descend, when a policeman intervened and said the medical man would be of more use at the top. The policeman was roped and went down to the bottom but found the weight of the disabled men greater than he could lift. Dr. Oliver then went to his assistance and together they succeeded in bringing the men to the surface. The physician was able to resuscitate one but the other died. Medals of the Royal Humane Society (a distinction instituted for the recognition of acts of bravery in the saving of life) have been conferred on both Dr. Oliver and the policeman.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Dec. 24, 1909.

Death of Edouard Brissaud

French medical science has just experienced an irreparable loss. Dr. Edouard Brissaud, professor of medical pathology at the Paris medical school, has just died, aged 57, after a surgical operation for tumor of the head. Brissaud was born at Besançon in 1852, and studied at Paris, where his principal teachers were Fèréol, Fournier and Charcot. He was laboratory assistant to Charcot in the laboratory of pathologic anatomy in 1878; he became physician of the hospitals in 1884 and *agrégé* in 1886. In 1899 Brissaud was appointed professor of the history of medicine to fill the place of Laboulbène, who had recently died. The next year he became professor of medical pathology. On May 18, 1909, he was elected a member of the Academy of Medicine.

Brissaud owed his celebrity chiefly to his works on the diseases of the nervous system. Under the direct influence of Charcot he had formed a taste for neurology, into which he introduced a whole series of new and original conceptions, especially in regard to Parkinson's disease, tabes, the interpretation of disturbances of sensibility in syringomyelia, etc. His studies on cerebral localizations, on hemiplegic contractures, on ophthalmoplegia, etc., were highly appreciated. While manifesting this decided predilection for neuropathology, however, Brissaud succeeded in avoiding narrow specialization, and none of the great problems of medical pathology were strangers to him. Thus, from 1879, he was engaged in demonstrating, in collaboration with Josias, the tuberculous nature of scrofulous gummas. Later he published a series of researches on local tuberculosis of the joints, etc. He described dysthyroidian infantilism, which is to-day designated under the name of infantilism of Brissaud. The clinical studies of Brissaud are founded, moreover, on a profound knowledge of pathologic anatomy, to which his works on cystic disease of the nipple, on the transformation of hepatic adenoma into cancer, etc., bear witness. In 1893 Brissaud with his colleague, Dr. Pierre Marie, founded the *Revue Neurologique*. He was also one of the directors of the second edition of the "Treatise on Medicine," the first edition of which was prepared under the direction of Charcot and Bouchard. More recently, with Professors Pinard and Reclus, he assumed the direction of the *Pratique médico-chirurgicale*, a kind of a compendium giving in alphabetic order a succinct account of the most important questions in modern practice.

Dedication of the Monument to Péan

A few days ago the monument to the memory of Dr. Péan was dedicated. It stands not far from the hospital which the illustrious surgeon built at his own expense, and which bears his name. It is a statue in bronze representing Péan standing in frock coat, his broad shoulders and energetic features being well rendered. On the stone pedestal is the figure of a patient raising herself on her bed and holding up toward the surgeon a bunch of flowers. M. Fallières, president of the republic, presided at the ceremony of dedication. Several speeches were made. Professor Pozzi, in the name of the Academy of Medicine, described the important work accomplished by Péan. Having arrived while still young, at the summit of his profession, during more than thirty years Péan held one of the highest places in French surgery; and in foreign countries, his name like that of Charcot, enjoyed an unrivaled celebrity. He was the introducer of several operative methods of great importance, and the inventor of a great number of ingenious processes. It may be said that, directly or indirectly, he had a formative influence on all the contemporary masters of abdominal surgery. Péan was the first one to practice (in 1864) in Paris, the operation of oophorectomy, in which the great Nélaton himself had always failed. Péan's second title to the gratitude of surgeons is the substitution of forceps for ligatures to stop hemorrhage. Péan attached great importance to this part of his work, and accordingly M. Gauguié, the sculptor, has represented the master holding a hemostatic forceps in his hand. According to Professor Pozzi, Péan was neither a savant in the actual sense of the word, nor a learned man, nor yet an orator, but he was in the highest degree a clinician, an operator, a healer.

Testimonial of Respect to Professor Teissier

A few days ago at the Hôtel-Dieu of Lyons, in the presence of a great number of professors who came to Lyons on the occasion of this ceremony, a medal was given to Dr. Joseph Teissier, professor for twenty-five years at the Lyons medical school, by his pupils in France. Among those present were Professors Maragliano of Genoa, Grasset and Rodet of Montpellier, Bard of Geneva, Drs. Hallopeau and Pierre Teissier of Paris, and Frenkel of Toulouse.

Death of Dr. L. Malassez

Dr. L. Malassez, assistant director of the School of Higher Studies, president of the Society of Biology, and a member of the Academy of Medicine, died December 22, aged 67. Malassez had published a great number of works on normal and pathologic histology. His researches on the blood were particularly well-known. He invented many pieces of laboratory apparatus, especially a hemocytometer with a graduated chamber and a hemochromometer, which is considered the most precise, and at the same time the most simple apparatus for determining directly the quantity of hemoglobin contained in the blood.

Reorganization of the Morgue

The general council of the department of the Seine has just decided that the morgue should be torn down and rebuilt to form, not merely a mortuary depository, but a medicolegal institution, the creation of which has been demanded for a long time by the scientific professions. The expense will be $200,000 (1,000,000 francs) and the general government will be asked to bear half the expense.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Dec. 22, 1909.

Personals

Professor Hertel of Jena has been appointed successor to Professor Schirmer as director of the eye clinic at Strasburg.

Professor Hoche, director of the psychiatric clinic, has been chosen rector of the University of Freiburg for the year 1910-11.

Sickness Insurance in 1908

The number of sickness societies formed on the basis of the social legislation in the German empire according to the official statistics just published was increased only by 8. The entire membership increased about 200,000, so that at the end of the year it amounted to 12,500,000. The local societies include the greatest number of these. The number of cases of illness amounted to over 5,000,000. For every member there were 0.42 cases of sickness as opposed to 0.41 for 1907 and 0.38 for 1906. The number of days of illness amounted to 104,000,000, opposed to 97,000,000 in 1907. For every member there were 8.43 days of sickness, which is a considerable increase over the former year. The regular receipts amounted to $80,000,000 (333,000,000 marks) as opposed to $75,000,000 for 1907. The regular expenses have increased more markedly than the income, $6,240,000 (26,000,000 marks), from about $72,000,000 to $78,000,000. Of this amount about $71,280,000 were expended for sickness. Medical treatment required $16,448,000 as compared with $15,192,000 for the previous year. The expense of management rose from $4,028,000 to $4,344,000 and amounted to 34.28 cents (1.47 marks) per member as compared with 32.16 cents for the previous year.

German Medical Statistics

In the last number of the *Deutsche medizinische Wochenschrift*, the well-known medical statistician Prinzing of Ulm gives an interesting review of the statistics of physicians in Germany in 1909 based on the "Imperial Medical Calendar" for 1910, published by Professor Schwalbe. The number of physicians in Germany for this year amounts to 31,969, an increase of only 329 over the previous year. As the population of Germany in 1909 was 63,886,000 we have 5 physicians for 10,000 inhabitants, showing a continuous decrease since 1906 when the number was 5.06. Comparing this with other European countries, we find that for 10,000 inhabitants, England has 7.1 physicians; France, 4.9; Italy, 6.3; Austria, 4.1; Denmark, 5.2; Norway, 4.5; Sweden, 2.4; Russia, 1.8. The rise in the number of physicians in the last five years is slight because of the increase in the length of medical study which took effect a few years ago and especially on account of the addition of the so-called practical year. A marked increase in the number of physicans is to be expected soon as the number of medical students in the last few years has continually increased. This amounted to 6,080 for the winter semester of 1905, 7,219 for 1906, 7,773 for 1907, 8,879 for 1908, and 9,239 for the summer semester of 1909. In the different divisions of Germany the distribution of physicians is very different. In Eastern Prussia with greater Berlin the total number amounted to 9,347, a proportion of 4.93 per 10,000 inhabitants, in West Prussia it is 9,947, or 4.8 per 10,000, in Southern Germany 6,672, or 5.26 per 10,000 inhabitants. Naturally the greatest concentration of physicians is found in the large cities. Wiesbaden instead of Berlin has first place with 22.9 per 10,000 inhabitants, then follow Munich with 16.2, Strasburg with 14.6, Kiel 12.6; then comes greater Berlin with 12.4 and Frankfurt a.M. with 12.3. In the lowest place among the large cities stands Duisburg with 3 per 10,000. Of the large cities, Munich has experienced the greatest increase during the last year, as the number of physicians there has risen from 15.8 to 16.2 per 10,000 inhabitants. The still greater increase from 9.7 to 16.2 in Cologne is explained by the great influx of physicians who were attracted thither by the strike against the Krankenkassen. There are 381 places in Germany without a physician. In the majority a physician would not have a sufficient support.

The number of women physicians increases very slowly in Germany, being from 55 in the previous year to 69 in 1908. They settle almost altogether in the large cities. The tendency to specialism has apparently passed its high point. In the last year there were in the large cities 4,441 specialists and 8,491 general practitioners. For each 100 physicians there were 34.3 specialists as compared with 34.6 for the previous year. Frankfurt a.M. has the largest number of specialists as compared with other physicians, viz., 42.6 per 100; then follows Stuttgart, 42.4; greater Berlin, 31.7; and Kiel with the smallest number, 18.4. The representation of the individual specialties in the large cities has not materially altered as compared with the previous year; only a few show a slight increase.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Dec. 27, 1909.

Physical Culture of Our School Children

The results of investigations in schools, conducted by a number of school physicians, have revealed such unsatisfactory sanitary conditions among the children that a special advisory committee on the subject has been appointed by the ministry of the interior to consist of presidents of school boards, teachers of gymnastics and athletics, physicians and other experts. The program of the transactions of this committee will comprise the following subjects: How shall school children be taught to pay special attention to physical culture? How shall school gymnastics be supplemented by home gymnastics? What kind of physical culture is fit for children of elementary classes (age 6-14 years), and what is fit for the higher schools (14-18 years)? Gymnastic training as a

preliminary measure for military education. Advisability of teaching rifle-firing. Organization of "boy scouts" after the English fashion. A special part of the transactions will deal with the care of the children with mental or physical defects. Thus, blind children as well as deaf-mutes will have to be educated in special institutes, and one of the questions bearing on this point is whether this education in homes shall be compulsory or shall it be left to the discretion of the parents. Likewise, the education and care of feeble-minded children is to be made a matter of the state, not a private one. The meetings of the committee will take place in January, 1910.

Personal News

Docent Dr. Alexander of Vienna has been appointed professor of otology by the emperor. Alexander's career is a singularly brilliant one. He is only 36 years of age, and already as a student he achieved much fame by his anatomic researches on the pathology of the ear. His ear-clinic in the Vienna policlinic, of which he is the head since two years, is much frequented by numerous doctors from America.

The vacant post of director of the second gynecologic clinic of the university has been offered to Professor Hofmeister in Ratte, and he has consented to succeed the much-lamented von Rosthorn, whose tragic death caused much confusion. The eye-clinic, which is still vacant after Schnabel's death, will in spite of all obstacles be taken over by Hess, about whom I have written previously (Nov. 20, 1909, liii, 753).

Consumption of Alcohol Among the Various Races in Austria

A statistical study of the amount of alcohol consumed by the various nations who form this empire has been published recently. It appears that the lower the standard of general culture, the more alcohol is consumed. There are altogether eight different nationalities here, Germans, Czechs, Italians, Hungarians, Roumanians, Ruthenians, Slovenians and Poles. Among the Germans and Italians mostly wine and beer is consumed, the Hungarians drink only wine, while the other nations drink mostly gin, whisky or brandy. One of the worst features is drinking by women and children, which is quite common among the Slavic races. Even babies are given some diluted spirit to "soothe" them. The religious and ethical institutions favor drinking in a high degree, and the state gets a large amount of its revenues from the alcohol tax, wherefore the official antialcohol campaign is really hypocritical. It has been shown that a peasant's family will spend 10 to 15 per cent. of their income on drinking. The average consumption of alcohol in German countries is constantly falling (being at present about 32 liters or 8 gallons per head per year, while in the poorer agricultural Slavic districts the amount is trebled easily. The antialcohol movement has practically no influence up till now among the uneducated classes, whilst the intelligent classes have responded little to its call. The attempts to raise the price of alcohol to a nearly prohibitive figure have resulted only in an increase of the revenue. The medical effects of the present conditions are seen in a very clear way during the recruiting, when the young men of various nationalities are called to military service. While 60 per cent. of the Germans, Italians and Hungarians are fit, only 35 per cent. of the poorer Slav youths can be admitted.

Pharmacology

CURARE

Report to the Council on Pharmacy and Chemistry

Physiologically, curare is an exceedingly active drug; its therapeutic value, however, in the opinion of the Council, is largely hypothetical. Added to this is the impossibility of obtaining pure material of definite action and the confusion that exists in regard to the names of the alkaloid obtained from different kinds of curare. For these reasons, the Council has voted that curare and curarin be not described in New and Nonofficial Remedies, but in view of the fact that these drugs are often referred to in medical literature it is thought advisable to publish the following general article.

W. A. PUCKNER, Secretary.

CURARE

Under the name curare several varieties of native extracts used as arrow poisons are known. These are commonly indicated by the kind of container in which they come into commerce, and are called calabash curare, tube curare (coming in bamboo), and pot or jar curare (German Topf).

The calabash curare is obtained principally from *Strychnos toxifera*, and contains the alkaloid curarin: the tube curare, or tubocurare, is from an undetermined source, it yields the alkaloids, tubocurarin and curin; the third variety of curare coming in jars is obtainable chiefly from *Strychnos Castelnæi* and *Cocculus toxiferus* and contains the alkaloids protocurarin and protocurin. Curare is variously called urari, woorari and woorali.

The method of preparation is not known. The various curares are found in brown masses of an intensely bitter taste not wholly soluble in water but much more soluble in dilute acid.

Action and Uses.—Curare paralyzes the endings of motor nerves in striped muscles in the following order: (a) short muscles of the toes, ears and eyes; (b) limbs, head, and neck; (c) respiration; (d) the heart, which is not affected except with very large doses. The paralysis does not affect the sensory nerves. In warm-blooded animals death occurs from paralysis of the respiration, convulsive movements sometimes occur and glycosuria is occasionally produced. In man little or no effect is produced when it is administered by the mouth.

Small hypodermic doses increase the force and the frequency of the pulse, raise the temperature slightly and cause perspiration and an increase in quantity of the urine. From larger quantities of the poison violent febrile phenomena occur, commencing with the characteristic symptoms of a severe chill.

Paralysis of the lower extremities comes on and may last from a few minutes to an hour. The fever may continue for 5 or 6 days if the dose is larger. Curare has been used but with little success in the treatment of tetanus and other conditions in which convulsions are prominent, and for this purpose it may be injected subcutaneously.

Curare should be used only after the specimen has been tested and the dose should be calculated as follows: The fatal dose per kilogram of dog is determined and one-tenth of this amount is administered for each kilogram of weight of the patient. This dose may be cautiously increased until there is some interference with respiration if care be taken not to induce total paralysis of respiration and if preparation has been made to carry on efficient respiration if it should become necessary.

Dosage.—The exact dose cannot be stated, as will be understood from what has been said, but the crude extract is somewhat variable in activity, and it would seem to be much better to use only the pure alkaloid curarin for therapeutic purposes. Physostigmin is the physiologic antidote—but artificial respiration must be the main dependence.

CURARIN

Curarin ($C_{19}H_{24}N_2O$), is the alkaloid prepared from calabash curare.[1]

1. This is prepared from calabash curare as follows: The finely powdered curare is macerated for some days with successive portions of water and then with diluted sulphuric acid. The mixed filtrates are treated with platinum chlorid so long as any precipitation occurs, the voluminous clay-colored residue is filtered through hard filter paper with pressure and washed with alcohol. The residue is transferred to absolute alcohol, heated on a water bath and decomposed by a stream of hydrogen sulphid, adding alcoholic ammonia from time to time to neutralize the liberated hydrochloric acid. Decomposition is complete in half an hour usually if the temperature is maintained sufficiently high, but the reaction does not take place in the cold. The mixture is filtered and the residue washed with absolute alcohol. Ether is added to the dark, red-brown filtrate to precipitate the curarin. The voluminous, flesh-colored, flaky, precipitated alkaloid is quickly collected on a filter, washed with ether and transferred to a desiccator wherein it becomes a slightly colored powder.

This impure product containing sulphur and inorganic salts is purified by treating it with a mixture of chloroform and absolute alcohol and filtering. The residue is dissolved in absolute alcohol and again precipitated with ether and the residue treated as before. This must be repeated until 0.34 milligrammes of the product will kill one kilogramme of rabbit, but this degree of toxicity is often attained after the first drying. (Boehm. Arch. der. Pharm., ccxxxv, 660.)

Tubocurarin ($C_{19}H_{21}NO_4$) from tubo-curare, is given as a synonym for curarin by Merck, although the action of the two is not the same. Tubocurarin is prepared as follows: An aqueous or slightly acid solution of curare is made slightly alkaline by ammonia causing a precipitate to be formed. This is separated from the solution which is now free from curin, another principle of curare. The solution is evaporated to a thin syrupy consistence and mixed with 2 volumes of alcohol and the clear solution precipitated with alcoholic solution of mercuric chlorid. The yellow flocculent precipitate thus formed is suspended in alcohol and treated with hydrogen sulphid to liberate the base from the mercury. The filtrate from this operation is treated with 3 volumes of ether, thereby precipitating the hydrochlorid of tubocurarin. This product is washed and dissolved in 96 per cent. alcohol and precipitated by the addition of 5 volumes of ether. From the hydrochlorid the free base can be prepared.

Curarin is a deliquescent powder soluble in water and alcohol (Merck). Oxidized by potassium permanganate it yields amines and oxalic acid. In general it has the properties of a quarternary base. It has a bitter taste.

Action and Uses.—The pharmacologic action of curarin has been described under curare, but mention should be made of certain differences between the several alkaloids found in the different varieties of curare. Curarin first paralyzes the motor nerve endings without affecting the heart and blood pressure to an important degree.

Tubocurarin has a very much weaker action on the motor nerve endings than has curarin. It first stimulates the reflex excitability of the cord which it later depresses. It also has a much greater effect on the heart, increasing the rate. The increased reflex irritability may persist with small doses. Curin does not participate in the action of curarin on the motor nerve endings but acts directly on the heart, first increasing the systole then depressing it; the heart finally stops in diastole after fatal doses.

Protocurarin acts qualitatively like curarin, but it is more active. Curarin is used for the same purposes as curare, but it has the advantage of being more constant in its action.

Dosage.—Curarin is used therapeutically only for its action on the motor nerve-endings and the dose must be very carefully regulated by the effects. From one to twelve milligrammes are injected for a man. The dose should be cautiously pushed until the extremities are motionless. The means for carrying on artificial respiration must be at hand, and if the respiration is seriously impaired artificial respiration must be carried on. The drug is very rapidly excreted by the kidneys and natural respiration is soon restored if the dose has not been excessive. The heart must also be carefully watched.

Owing to the differences in physiologic action between the curarins of different origin it is unfortunate that a manufacturer should give tubocurarin as a synonym for curarin.

CONCLUSIONS

1. Curare is a powerful and dangerous respiratory and cardiac depressant and paralyzant of motor nerve endings in striped muscle.
2. The value of curare either in tetanus or in any other disease is questionable.
3. No dose can be stated. The antidote, physostigmin, must be at hand and one must be ready to perform artificial respiration after each administration.
4. Each of the several alkaloids from the three varieties of curare has a different strength and a somewhat different action.
5. These alkaloids are not at present sufficiently differentiated in commerce to enable a physician to know which one he is using.

THE CHAMLEE CANCER CURE

Express Companies as an Aid to Quackery

No more valuable work is being done than that performed by the post-office authorities in denying use of the United States mails to those scoundrels who prey on the credulous and ignorant sick. So numerous and powerful has this class of human parasites become, however, that they have attempted to bring pressure to bear at Washington in order to secure what practically amounts to immunity for their cruel and fraudulent practices. To the honor of those in authority be it said they have so far been unsuccessful.

THE JOURNAL has published during the last year reports of several cases in which the "cancer cure" quacks have been put out of business by the activity of the postal authorities. One individual who conducts a particularly cruel fake is S. R. Chamlee who apparently is legally entitled to attach the letters M.D. to his name. Nearly four years ago Mr. Adams in his Great American Fraud series in referring to this man wrote:

"I can do no more than mention, by way of warning, a scoundrel who endeavors to frighten women into taking his treatment by advertising in the papers, 'In woman's breast any lump is cancer.'"

Chamlee sends out the usual "form" letters common to his ilk, each succeeding letter heaping on the "agony" and attempting to frighten the prospective victim into parting with her money and neglecting proper treatment. To quote:

"Our treatment is the only one that positively eradicates cancer from the blood, destroys cancer germs, heals the cancer sore, if any, and cures perfectly and permanently."

Then as if to terrorize the patient the letter closes:

"We keep a complete record of every case and know that sudden and unexpected death occurs in many advanced cases."

The amount asked for the "treatment" is $25 which is reduced to $10 if the first few letters fail to secure a victim.

Now comes the sequel. Evidently the over-worked fraud-investigation department of the post-office finally reached this particular humbug for persons on the mailing list of his concern have received the following printed slip:

NOTICE

We have leased Dr. Chamlee's place and business for one year and have employed Dr. S. R. Chamlee himself and his force of assistants. He makes all the medicine and treats all patients that come at *any price they can pay. Dr. Chamlee has no time to ever answer any letters.* Address all letters to

The St. Louis Sanitarium Co.,
P. O. Lock Box 843, St. Louis, Mo.

Accompanying this was the following letter which will be read with interest by those who have given any thought to the question of the moral and legal responsibility of common carriers. The italics are ours:

THE ST. LOUIS SANITARIUM CO.

St. Louis, Mo., Jan. 1st, 1910.

The Government has just decided that Physicians cannot diagnose cancer through the mails, and have consequently stopped our mail, and have refused to pay any money orders coming through the mail.

This, however, applies to our mail only and does not affect our treatment here in the office in the least. *We are still doing business but have to take a new name and address.*

The only way to get our valuable medicine is to NOT send a Money Order as we cannot cash them. *Send the money through an Express Co.*, P. O. Lock Box 843, St. Louis, Mo., and address all communications simply The St. Louis Sanitarium Co., P. O. Lock Box 843, St. Louis, Mo.

Upon receipt of your money *we will promptly ship your medicine to your nearest Express office.* Please mention your nearest Express office and Express Co., handling same. We are using the above named box and name until we can decide on a permanent name and address. If you are coming to St. Louis, we will give you instructions how to reach us.

Yours very truly,
The St. Louis Sanitarium Co.

Whatever may be said about the shortcomings of the United States post-office it is apparent that its moral obligations to the public as a common carrier are heeded to a greater extent than in the case of those privately owned monopolies which control the shipping of packages in the United States.

Bismuth Beta-Naphtholate—A Correction

In the laboratory contribution, "Bismuth beta-naphtholate," published in THE JOURNAL, Dec. 18, 1909, the composition of the bismuth beta-naphtholate tablets of the H. K. Mulford Company was incorrectly stated. In calculating, from the analytical results, the probable composition of the bismuth beta-naphtholate contained in the tablets proper allowance was not made for the diluent (excipient) used in their manufacture.

The report stated that the analytical results indicated that the bismuth beta-naphtholate used in the tablets had the following composition:

BISMUTH BETA-NAPHTHOLATE (H. K. Mulford Co.)	BISMUTH.	"TOTAL NAPHTHOL."	SOL. IN CHLOROFORM OR ETHER.
Specimen 1 (tablets)	56.47	6.89	4.89
Specimen 2 (tablets)	51.27	18.84	3.21

Actually the analysis indicated the bismuth beta-naphtholate to have the following composition:

BISMUTH BETA-NAPHTHOLATE (H. K. Mulford Co.)	BISMUTH.	"TOTAL NAPHTHOL."	SOL. IN CHLOROFORM OR ETHER.
Specimen I	67.74	8.22	5.82
Specimen II	59.85	21.98	3.74

Thus it is seen that the naphthol compound contained in the tablets was much richer in bismuth and in combined naphthol, and that it also contained more chloroform-soluble matter than was indicated by the published report.

W. A. PUCKNER.

Correspondence

Suggestions for the U. S. Pharmacopeia IX

To the Editor:—I have read with interest the suggestions made by Dr. Oliver T. Osborne in THE JOURNAL, January 1, page 50, and trust that his series of five articles will awaken an increased interest in the Pharmacopeia among physicians throughout the entire country.

The U. S. Pharmacopeial Convention adopts general principles to be followed in the revision of the Pharmacopeia, which are mandatory in nature. The convention also passes resolutions which refer subjects either with or without recommendations to the Committee on Revision of the Pharmacopeia. The general principles and the resolutions adopted by the convention of 1900 appear on pages xxx to xxxiii inclusive of the U. S. Pharmacopeia VIII, and should be studied by all who are interested in formulating general principles and resolutions to be presented at the convention of 1910.

Medical societies and medical schools entitled to representation at the convention to be held at Washington, May 10, 1910, should take Dr. Osborne's suggestions as basis for discussion and formulate such additional recommendations as may be deemed best and then instruct their delegates to the convention.

The ten suggestions submitted by Dr. Osborne are timely, but unfortunately, will not meet with the hearty approval of all who are likely to be delegates in attendance at the convention. Recommendation No. 1 proposes to limit the official drugs to those which "are of positive therapeutic value." This is in striking contrast to the Coudrey measure, known as House of Representatives Bill 13,859, now in the hands of the Committee on Interstate and Foreign Commerce which provides that the government shall edit and publish the Pharmacopeia and that the Pharmacopeia shall contain "all drugs and chemicals whether generally used or not."

Such a law, if literally carried out, would produce a pharmacopeia larger in size than any single volume published in the world. The author of the bill (which by the way is not the Hon. H. M. Coudrey) may be a delegate to the 1910 convention and his views are no more extreme than those held by other persons who are likely to take part in the proceedings.

The Pharmacopeial Convention will meet in 1910, but the revised Pharmacopeia will not be published for two or three or more years and will be officially designated as the U. S. Pharmacopeia IX. This name is more appropriate than U. S. Pharmacopeia of 1910. The present Pharmacopeia is officially designated as the U. S. Pharmacopeia VIII. Its compilation was authorized by the convention of 1900, but it was not published until 1905.

The recommendation (No. 5) made by Dr. Osborne that official titles should be made as simple as possible and official abbreviations given when advisable, deserves hearty support. The 1900 convention adopted a similar general principle, but the Committee on Revision failed in its effort to observe the rule, as will be agreed by all who have attempted to write prescriptions calling for such official chemicals as benzosulphinidum, hexamethlyenamina, sulphonethylmethanum. I trust that the next revision committee will be more successful in observing this general principle.

The convention should recognize the teaspoon as holding 5 c.c., the dessert-spoon 10 c.c., and the table spoon 15 c.c. M. I. Wilbert (Proceedings of the Am. Ph. Assn., 1905, liii, 301) has shown that these are the average capacities and the American Medical Association has approved of these standards.

The amount of drug in the average dose of very potent preparations should be stated. As an example, the amount of opium in the average dose of tincture of opium, and the amount of strychnin in the average dose of tincture of nux vomica.

If physicians generally will contribute to THE JOURNAL suggestions for the U. S. Pharmacopeia IX, the collection of recommendations will enable medical societies and schools of medicine to carefully consider and decide on questions which otherwise will come before the convention of 1910 and find delegates unprepared to act intelligently or in cooperation.

HENRY M. WHELPLEY, M.D., St. Louis.

American Druggists Syndicate

To the Editor:—Permit me to congratulate and to thank you for your editorial and your article in the Department of Pharmacology, January 8, on the American Druggists Syndicate. It was high time that attention was called to the matter. I know of no other single agency that has such a demoralizing effect on the profession of pharmacy, that is so degrading the druggists of the country. We thought we were succeeding in diminishing the nostrum evil and we thought that the profession of pharmacy was beginning to become aware of its high mission and of the necessity of its being in cordial relations with the medical profession, but apparently this was a mistake. For an impudent promoter who has no idea of or sympathy with the ethics of either the professions of pharmacy or of medicine, comes along and thousands of druggists follow his lead and proclaim him a Moses.

It is certainly sad, nay, it is discouraging. Let us hope that both the editorial and the article on the A. D. S. in THE JOURNAL will be called to the attention of the druggists of the country by the various pharmaceutical journals, and that they, *i. e.*, the druggists, will perceive the folly and the danger of following leaders who have only their personal interests at heart.

WILLIAM J. ROBINSON, M.D., New York.

[COMMENT: Somewhat in line with Dr. Robinson's letter is one from another physician urging that the article and editorial referred to be sent to every retail druggist in the country. We believe, however, that the matter may be brought to the attention of the druggists concerned in a more direct, and therefore effective, way. The article and editorial on the American Druggists Syndicate have been reprinted and will be sent on receipt of a stamp to cover postage. There are doubtless many physicians who are interested in the progress of pharmacy and the propaganda against nostrums and who would like to register a protest to their local druggists against this hybrid "patent medicine" concern. To such this reprint will prove a convenience. That such protests will, when thus made, have a good effect cannot be doubted.—ED.]

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

FORMALDEHYDE GAS POISONING

To the Editor:—Please cite cases and literature on formaldehyde gas poisoning, and inform me as to the effect on the human being of the continuous inhalation of a small amount of gas, as when a room which has been fumigated is used soon afterward as a sleeping-room. What would be the effect on temperature, pulse and respiration? How would it kill?

E. E. WUTTKE, Halstead, Kan.

ANSWER.—The gas is very irritating when inhaled and may lead to inflammation of the eyes and of the respiratory organs. It might produce death by causing edema of the larynx or by inducing capillary bronchitis. There seem to be no reports of death or of serious poisoning from the inhalation of small quantities such as would remain after a disinfected room had been well aired. The irritating nature of the gas usually prevents persons from remaining in it long enough to be seriously harmed. It is stated by Humpstone and Lintz (THE JOURNAL, Jan 30, 1909, p. 380) that only four cases of formaldehyde poisoning are to be found in the literature. Their case and one since reported by A. J. Bower (THE JOURNAL, April 3, 1909, p. 1106) make six in all. In all these the poison was swallowed in the form of a strong solution.

EFFECT OF DENATURED ALCOHOL APPLIED TO THE SKIN

To the Editor:—Please refer me to articles in THE JOURNAL concerning denatured alcohol and its effects when applied to the skin?

L. T. A. HOTTENDORF, M.D., Randolph, Utah.

ANSWER.—You will find references to denatured alcohol in THE JOURNAL, Dec. 25, 1909, p. 2173, and Jan. 1, 1910, p. 87. We can

find no explicit statement as to the injurious results from applying methyl or wood alcohol to the skin, but as inhalation of the vapor of methyl alcohol has proved injurious and has even produced blindness, it would certainly be imprudent to use alcohol which has been denatured by mixing with methyl alcohol (wood alcohol).

The Public Service

Medical Department of the Army

Changes for the week ended Jan. 8, 1910:

Hughes, Leonard S., 1st lieut., M. R. C., granted 3 months' leave of absence, to take effect about Feb. 15, 1910.

O'Connor, R. P., capt., leave of absence extended 30 days.

Williams, Harry B., 1st lieut., M. R. C., recently appointed, is ordered to active duty in the service of the United States, and will proceed on Jan. 10, 1910, to Fort Sheridan, Ill., for duty.

Pierson, Robert H., capt., granted 10 days' leave of absence.

In compliance with G. O. 230, War Department, Nov. 12, 1907, the assignment of officers as Inspector for the Medical Department and Hospital Corps, National Guard, State of New York, is announced as follows:

Colonel John Van R. Hoff, Medical Corps, to organizations stationed in New York City.

Major Frank R. Koefer, Medical Corps, to organizations stationed in Albany and Troy.

Major Elbert E. Persons, Medical Corps, to organizations stationed in Brooklyn.

Captain Wm. R. Davis, Medical Corps, to organizations stationed in Buffalo, Rochester and Binghamton.

Hughes, Leonard S., 1st lieut., M. R. C., left Fort Worden en route to Fort Casey, Wash., for temporary duty.

Murtagh, John A., capt., leave of absence extended 7 days.

Glennan, James D., major, granted 30 days' leave of absence.

Rafferty, Ogden, lieut.-col., January 1, retired from active service by reason of disability incident to the service.

Farr, Charles W., major, January 1, retired from active service by reason of disability incident to the service.

Shiflock, Paul, lieut. col., January 1, retired from active service by reason of disability incident to the service.

Gibson, Robert J., lieut. col., January 1, retired from active service by reason of disability incident to the service.

Bloombergh, H. D.; Nelson, Kent, capts.; Bartlett, Wm. K., 1st lieut., ordered to report in person to Major William E. Purviance, Medical Corps, president of examining board at Manila, for examination for promotion.

Patterson, Robert H., capt., granted leave of absence for 60 days, with permission to apply for an extension of 30 days.

Dolley, Gilman C., 1st lieut., M. R. C., ordered to active duty in the service of the United States, and assigned to duty at Fort Leavenworth, Kan.

Davis, O. F., 1st lieut., M. R. C., granted 4 months' leave of absence, to take effect on his relief from duty in the Philippines Division, with permission to go beyond sea.

Thorne, James I., 1st lieut., M. R. C., ordered on arrival in the United States to proceed to his home, and on expiration of leave of absence will stand relieved from active duty in the Medical Reserve Corps.

Hall, James F., capt., granted leave of absence for 21 days on surgeon's certificate of disability, to take effect on expiration of his present leave of absence.

Wickline William A., capt, relieved from duty at Army General Hospital, San Francisco, and ordered to Fort Niagara, N. Y., for duty in command of Company C, Hospital Corps, relieving Patterson, Robert H., capt., who on being thus relieved will proceed to Fort Banks, Mass., for duty.

Medical Corps of the Navy

Changes for the week ended Jan. 8, 1910:

Ames, H. E., medical director, commissioned medical director from Nov. 20, 1909.

Brister, J. M., surgeon, commissioned surgeon from Jan. 5, 1909.

Cole, H. W., P. A. surgeon, detached from the *Yankton*, and granted leave for 1 month.

Fauntleroy, A. M., P. A. surgeon, ordered to the *New York* and to additional duty in connection with the *Indiana*.

Phelps, J. R., asst.-surgeon, detached from the *New York* and ordered to the *Yankton*.

Public Health and Marine-Hospital Service.

Changes for the week ended Jan. 5, 1910:

Lumsden, L. L., P. A. surgeon, detailed to represent the Service at the annual meeting of municipal health officers of Ohio, to be held in Columbus, Ohio, Jan. 20-21, 1910.

Hobdy, W. C., P. A. surgeon, granted 4 months' leave of absence from Feb. 1, 1910.

Vogel, C. W., P. A. surgeon, granted 5 days' leave of absence from Dec. 25, 1909, under paragraph 191, Service Regulations.

Francis, Edward, P. A. surgeon, granted 2 days' leave of absence from Dec. 28, 1909, under paragraph 191, Service Regulations.

Roberts, Norman, P. A. surgeon, granted 3 days' leave of absence from Dec. 29, 1909, under paragraph 191, Service Regulations.

Bailey, C. W., acting asst.-surgeon, granted 2 days' leave of absence from Jan. 3, 1910.

Goldsborough, B. W., acting asst.-surgeon, granted 30 days' leave of absence from Jan. 5, 1910.

Tappan, J. W., acting asst.-surgeon, granted 2 days' leave of absence from Dec. 9, 1909, on account of sickness.

Book Notices

COLLECTANEA JACOBI. Collected Essays, Addresses, Scientific Papers and Miscellaneous Writings of A. Jacobi, M.D., Professor of Infantile Pathology and Therapeutics, New York Medical College. In Eight Volumes. Edited by William J. Robinson, M.D., New York, 1909. Price, $15 per set. New York: The Critic and Guide Co., 1909.

Dr. Jacobi has not been classed as a "literary doctor," but rather as a busy practitioner who occasionally contributes to current medical literature. All who know him know him as a great worker, and as one who has done at least his share in the making of medical history in this country during the nearly sixty years he has been in the profession. But even those nearest to him will be astonished at one phase of his work—his "occasional contributions" to medical literature—here printed in this Collectanea Jacobi of eight volumes making a total of 3,928 pages. The author's preface is to a certain extent autobiographical, and it is hinted that there may be, some time, a real autobiography. It is certainly hoped that this may be so, for surely an autobiography of a man who has been among the leaders in medicine for so many years as has Dr. Jacobi would be interesting, inspiring, and, in a sense, a history of American medicine since 1853.

The contributions cover a wide variety of subjects, although naturally some phase of pediatrics is most prominent in the titles. In Volume I there are 17 articles, all relating to diseases of children, two being especially important at the present time, namely, "History of Cerebrospinal Meningitis in America" and "Cerebrospinal Meningitis, Symptomatology and Treatment." Volume II contains 25 papers, also on diseases of children. They cover diseases of the respiratory tract, the heart, diarrhea, dysentery, tabes mesenterica, acute rheumatism in infancy, etc.

The first paper in Volume III is "A History of American Pediatrics Before 1800," a most interesting summary occupying 40 pages. Besides this there are 16 other papers, including such subjects as hygiene, rachitis, infant feeding, diphtheria, clinical lectures on pediatrics, besides the report of rare cases. Volume IV is devoted to contributions on therapeutics and contains an article on phases in the development of therapy and 27 other papers, only 3 or 4 of which relate exclusively to diseases of children. Volume V is mainly devoted to pathologic subjects, nearly all referring especially to conditions in children. There are 23 articles in this volume and they cover such subjects as premature closure of the fontanels, craniotabes, aneurism, dermoid cysts, monstrosities, and many others.

In Volume VI are found some of the more philosophical studies and papers on sociologic and general medical subjects. There are 16 papers in this volume, and their character may be gathered from such titles as "Specialism and Specialists," "Monism in Medicine," "Brains and Capital Punishment," and "Non Nocere," delivered before the Eleventh International Medical Congress at Rome in 1894.

Volume VII contains 60, and the last volume 50 articles. These are made up of miscellaneous addresses and writings comprising inaugural orations, valedictory and memorial addresses, after-dinner addresses and toasts, and addresses delivered before a variety of societies and associations both here and abroad. At the end of Volume VIII is a general index to the volumes as well as a personal index referring to the individuals mentioned. Both of these indexes are very full and complete, and add materially to the value of the series of volumes.

The preceding outline indicates the general character of the articles here grouped together. Were there space to quote the titles the variety of subjects mentioned would indicate that Dr. Jacobi has been one of the leaders, not only in the making of pediatrics in America, but also of American medicine in the broad sense of the term. Certainly few men have had more influence on our profession than he, and that influence has always been for better things. With slight modification the words on Wren's tablet in Saint Paul's Cathedral are applicable here: "*Si monumentum requiris, circumspice.*" Certainly Dr. Jacobi needs no greater monument than these eight volumes. They are very tangible evidence of a busy and well-spent life.

OTITIC CEREBELLAR ABSCESS. By Heinrich Neumann, Privat-Docent, University of Vienna. Translated by Richard Lake, F.R.C.S. Cloth. Pp. 156. Price, 4 shillings net. London: H. K. Lewis, 136 Gower Street, 1909.

Dr. Neumann, at the clinics of Vienna, has observed as many cases of cerebellar abscess probably, as any one, and puts his experience and observations at our disposal in a clear and concise manner. We are indebted to Dr. Lake for a smooth, fluent translation of the book into English. In the first 72 pages Neumann treats the clinical part of his subject under the following headings: statistics, etiology and pathologic anatomy, symptomatology, initial stage, manifest stage, terminal stage, diagnosis, differential diagnosis, prognosis, operation, after-treatment. The remainder of the book is given to "details of cases." Neumann gathered 140 cases from literature since 1900 and adds 28 cases which he personally observed in Professor Politzer's clinic. All the functional tests of the vestibular apparatus of the labyrinth are carefully considered. Still under the heading of diagnosis he says: "Many of the symptoms of cerebellar abscess are present in every intracranial complication. It shares a few symptoms with temporal lobe abscess and many of the symptoms are common to it and labyrinthine suppuration." Prognosis: "Out of 28 cases there are seven cures." This book is of special interest mainly to otologists, surgeons and neurologists. The absence of an index is to be regretted.

THE PRACTICAL MEDICINE SERIES. Under the General Editorial charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School. Vol. VIII., Therapeutics, Preventive Medicine, and Climatology. Edited by George F. Butler, Ph.G., M.D., Henry B. Favill, A.B., M.D., and Norman Bridge, A.M., M.D. Cloth. Pp. 348. Price, $1.50; or $10 the series of 10 volumes. Chicago: The Year-Book Publishers, 1909.

This review of the year's literature on therapeutics, preventive medicine and climatology shows the increasing prominence given to measures aside from chemical or botanical drugs. While it is true that new drugs are constantly being produced and new applications and uses of old ones made, as shown in this volume, yet one is impressed with the large amount of study that seems to be given to hydrotherapy, internal and external, electricity, hyperemia, mechanotherapy, light, radium, vaccine and serumtherapy, and even psychotherapy. Preventive medicine occupies a constantly growing prominence in present-day medicine. The literature of the three subjects included in this volume of the "Practical Medicine Series" is well covered and can not fail to prove of value in keeping physicians abreast of therapeutic progress during the year.

VISITING NURSES IN THE UNITED STATES. Containing a Directory of the Organizations Employing Trained Visiting Nurses, with Chapters on the Principles, Organization and Methods of Administration of such Work. By Yssabella Waters, Henry Street (Nurses') Settlement. Cloth. Pp. 367. Price, $1.25. New York: Charities Publication Committee, 105 East Twenty-second Street.

As the author states in the preface, this book is issued for the purpose of showing what is being done in this country through the services of the trained nurse in what has been known for many years as "district nursing," and the extension of the work into medical inspection of schools, etc. Part 1 commences with a brief history of visiting nursing and then takes up the principle of the work and the methods of organization and administration. Part 2 is devoted to a directory of visiting nurses' associations and to statistical tables.

KLINIK DER MISSBILDUNGEN UND KONGENITALEN ERKRANKUNGEN DES FÖTUS. Von Professor Dr. R. Birnbaum, Oberarzt der Kgl. Universitats-Frauenklinik zu Göttingen. Paper. Pp. 274, with 49 Illustrations. Price, 12 marks. Berlin: Verlag von Julius Springer, 1909.

The author presents in one volume the whole subject of congenital anomalies. As a gynecologist he naturally lays special emphasis on their relation to childbirth. Thus he devotes 19 pages to hydrocephalus alone. This does not, however, made the book one-sided, nor does it affect its value as a scientific treatise on congenital anomalies. The illustrations are nearly all photographs of specimens from the Frauenklinik in Göttingen, and so are realistic and uniformly excellent. It is rather to be regretted that there are not more of them, as no subject lends itself better to such treatment. A final chapter deals with the legal status of monstrosities. The book should find a hearty welcome as a thoroughly scientific and compact exposition of a very scattered subject.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ILLINOIS: Coliseum Annex, Chicago, January 19-21. Sec., Dr. J. A. Egan, Springfield.

KANSAS: State House, Topeka, February 8. Sec., Dr. F. P. Hatfield, Olathe.

NEBRASKA: State House, Lincoln, February 9. Sec., Dr. E. Arthur Carr, 141 S. 12th Street.

NEW YORK: Albany, February 1-4. Chief of Examinations Division, Dr. Charles F. Wheelock.

WYOMING: State Capitol, Cheyenne, February 16-18. Sec., Dr. S. B. Miller, Laramie.

Arkansas November Report

Dr. F. T. Murphy, secretary of the State Medical Board of the Arkansas Medical Society, reports the written examination held at Little Rock, November 9-10, 1909. The number of subjects examined in was 12; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was 20, of whom 11 passed and 9 failed. Two reciprocal licenses were issued. The following colleges were represented:

PASSED College	Year Grad.	Per Cent.
University of Arkansas (1894) 85.5;	(1909)	75.8
Maryland Medical College	(1902)	75.9
St. Louis University	(1907)	78.3
Barnes Medical College	(1909)	80.8
Memphis Hospital Medical College (1899) 80.4;	(1900)	84.5
Meharry Medical College	(1909)	77.7
University of Nashville	(1901)	84.5
University of Tennessee	(1909)	82.5
University of Virginia	(1909)	87.2

FAILED		
College of Physicians and Surgeons, Little Rock	(1909)	54.6, 58
University of Arkansas	(1909)	60.5
Medical College of New Orleans University*	(1898)	63.7
Barnes Medical College	(1908)	68.5
College of Physicians and Surgeons, Memphis	(1909)	72.1
Meharry Medical College (1907) 63.7;	(1908)	51.2
Memphis Hospital Medical College	(1909)	73.4

LICENSED THROUGH RECIPROCITY College	Year Grad.	Reciprocity with.
College of Physicians and Surgeons, Chicago	(1903)	Illinois
Jefferson Medical College	(1867)	Missouri

* Became Flint Medical College in 1901.

Florida November Report

Dr. J. D. Fernandez, secretary of the Regular Board of Medical Examiners of Florida, reports the written examination held at Jacksonville, Nov. 10-11, 1909. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 37, of whom 30 passed and 7 failed. The following colleges were represented:

PASSED College	Year Grad.	Per Cent.
University of Alabama	(1909)	78
Yale Medical School	(1902)	92
George Washington University	(1905)	84
Atlanta School of Medicine	(1909) 84,	92
Atlanta College of Physicians and Surgeons	(1909)	80
Chicago College of Medicine and Surgery	(1909) 96,	97
College of Physicians and Surgeons, Chicago	(1902)	80
University of Louisville	(1909)	77
Kentucky School of Medicine	(1908)	86
Tulane University of Louisiana	(1909) 78,	86
University of Maryland (1899) 91;	(1909)	84
College of Phys. and Surg., Baltimore (1895) 87;	(1908)	80
University of Michigan, College of Medicine	(1909)	87
Bellevue Hospital Medical College	(1897)	90
Leonard School of Medicine (1908) 80;	(1909)	77
University of Pennsylvania	(1908)	87
Jefferson Medical College (1888) 78;	(1897)	77
Meharry Medical College	(1908)	75
Chattanooga Medical College	(1898)	85
University of Tennessee	(1885)	88
University of the South	(1909)	80
University of Virginia	(1906)	87
Queen's University, Kingston, Ontario	(1896)	90

FAILED		
Atlanta School of Medicine	(1909)	59
Atlanta College of Physicians and Surgeons	(1907)	70
University of Louisville	(1893)	30
Medical College of South Carolina	(1909)	68
University of West Tennessee	(1909)	72
University of the South	(1909)	66
University of Vermont	(1893)	60

Marriages

WILLIAM R. BAGLEY, M.D., Duluth, to Miss Marian Miller, of Chicago, January 1.

EDWIN L. WOOD, M.D., Dansville, N. Y., to Miss Edith Farnham, of Buffalo, December 30.

GEORGE HARVEY BUCK, M.D., to Miss Lela Kinsall, both of Greensburg, Kan., December 15.

DAVID HEINE LEVY, M.D., to Miss Dorothea G. Leopold, both of New York City, December 28.

RUDOLPH A. MICHELSON, M.D., to Miss Annie Michelson, both of Baltimore, December 26.

NOAH W. CLARK, M.D., Rossville, Ind., to Miss Rosettie C. Cline, of Flora, Ind., December 25.

WALTER R. GEORGE, M.D., to Mrs. Mary Irene Schandorf, both of Indianapolis, December 25.

ERNEST PAUL MURDOCK, JR., M.D., Chicago, to Miss Edythe Wood, of Albany, N. Y., December 27.

MILES U. LIESER, M.D., Vancouver, B. C., to BLANCHE DARROW, M.D., of St. Louis, December 29.

BURTON BOHANNON, M.D., St. Louis, to Miss Elma Estelle Hallett, of Sac City, Iowa, December 22.

ELMER E. EIFERT, M.D., to Miss Irene Black, both of Hillsboro, Ind., at Danville, Ill., December 26.

HENRY B. O'BRIEN, M.D., Pascoe, Wash., to Miss Lillian Neuquist, of Stillwater, Minn., December 28.

GUSTAVUS J. MCINTOSH, M.D., Devil's Lake, N. D., to Miss Mabel Colson, of Minneapolis, December 29.

CLARENCE S. ORDWAY, M.D., Toledo, Ohio, to Miss Marion Frances Sweet, of Green Bay, Wis., December 25.

CHARLES W. BURGESS, M.D., Bethany, Mo., to FRANCES E. RUTLEDGE, M.D., of St. Joseph, Mo., December 30.

FREDERICK WILLIAM TRETBAR, M.D., Hudson, Kan., to Miss Elsa Louise Wendt, of Fairfield, Iowa, December 29.

CHARLES REX KENNEDY, M.D., to Miss Annabel Daggett, both of Omaha, at Plattsmouth, Neb., December 25.

HORACE FAULKNER HOSKINS, M.D., Weyers Cave, Va., to Miss Maria Temple Bird, at Baltimore, December 28.

WILLIAM H. CURTISS, M.D., Frankfort, Ind., to Miss Mabel Hale, of Long Beach, Cal., at Sedalia, Mo., December 19.

Deaths

William Sterling Huselton, M.D. Georgetown University, Washington, D. C., 1865; a member of the American Medical Association; for three years assistant surgeon in the army during the Civil War; one of the organizers and a charter member of the staff of the Allegheny General Hospital, and later consulting surgeon to that institution; chief surgeon to the Pittsburg and Western Railroad, and division surgeon of the Baltimore and Ohio Railroad; for many years a member of the local pension board; for several years treasurer, and later president of the Allegheny County Medical Society; at various times an officer of the municipal government of Pittsburg; died at his home in that city, January 1, aged 69.

James Anthony Burroughs, M.D. Louisville Medical College, 1882; a member of the American Medical Association; president of the Medical Society of the State of North Carolina; formerly president of the Buncombe County (N. C.) Medical Society; and president and honorary member of the Tri-State Medical Society of Virginia and the Carolinas; a prominent member of the Mississippi Valley Medical Association and American Public Health Association; a member of the local board of health and of the State Board of Health; and one of the most noted specialists on tuberculosis of the United States; died at his home in Asheville, December 29, from nephritis, aged 52.

Herbert Charles Wilson, M.D. Trinity Medical College, Toronto, 1882; first speaker of the territorial legislature of Alberta; a practitioner of Edmonton since 1882; a member of the Northwest Council, and delegate to the Ottawa government from that body in 1885; formerly mayor of Edmonton, and in 1907, president of the Alberta Medical Association; died at his home, December 23, aged 50.

John Henry Marsh, M.D. Jefferson Medical College, 1889; a member of the American Medical Association; surgeon to St. Luke's Hospital; and founder of the Marsh-Highsmith Hospital, Fayetteville, N. C.; formerly president of the Cumberland County Medical Society; and for several years city superintendent of health; died in St. Luke's Hospital, January 2, from nephritis, aged 45.

Joseph Franklin Perry, M.D. Harvard Medical School, 1873; a member of the Massachusetts Medical Society; a veteran of the Civil War; editor and owner of the *Boston Journal of Health*; later medical director of an insurance company; founder of, and physician-in-chief to the Blue Hills Sanatorium, Ashmont, Mass.; died in the Boston City Hospital, December 31, aged 63.

George Edward Woodbury, M.D. Dartmouth Medical School, Hanover, N. H., 1860; a member of the Massachusetts Medical Society; surgeon of the Second District of Columbia volunteer infantry during the Civil War; a trustee of the Nevins Memorial Library; secretary of the Methuen Historical Society; died at his home in Methuen, December 26, from heart disease, aged 71.

George Francis Thomson, M.D. New York University, New York City, 1855; surgeon of the Thirty-eighth Massachusetts Volunteer Infantry, and later of the Twenty-sixth New York Volunteer Cavalry; a member of the Massachusetts Medical Society and assistant medical examiner of Hampshire county; died at his home in Belchertown, December 23, from heart disease, aged 77.

James Henry Stauffer, M.D. Baltimore Medical College, 1904; a member of the American Medical Association; formerly assistant physician in the obstetrical department of the Maryland General Hospital, and later in charge of the department of surgery in the dispensary of that institution; died in Johns Hopkins Hospital, Baltimore, January 3, from leukemia, aged 32.

Don Morrison Waggoner, M.D. Rush Medical College, 1881; Bellevue Hospital Medical College, 1882; president of the pension board of Lewistown, Ill.; one of the most prominent practitioners of Fulton county, who with his wife was making a tour of the world; died on board the steamer *Cleveland*, January 1, near Kobe, Japan, from cancer of the tongue, aged 48.

Henry Rust Parker, M.D. Dartmouth Medical School, Hanover, N. H., 1866; a member of the New Hampshire Medical Society; for two terms mayor of Dover; formerly president of the Dover Medical Society and Strafford District Medical Association; and president of the county pension board; died at his home in Dover, December 29, from pneumonia, aged 73.

Frank M. Warford, M.D. College of Physicians and Surgeons, Keokuk, 1856; assistant surgeon of the Third Iowa and Fourth Arkansas Volunteer Cavalry during the Civil War; also an attorney; for three terms president of the Hamilton County, Ind., Medical Association; died at his home in Cicero, December 17, from uremia, aged 78.

Horatio Walker, M.D. McGill University, Montreal, 1902; a member of the Medical Society of the State of California; formerly of Duluth, Minn.; a member of the faculty of the University of Southern California, Los Angeles; died in the Pasadena Hospital, December 30, two weeks after an operation for tuberculosis of the kidney.

John N. Parr, M.D. Medical College of Ohio, Cincinnati, 1866; a member of the Indiana State Medical Association; a veteran of the Civil War; for three years a clergyman of the Methodist Episcopal church; vice-president of the State Bank of Sheridan; died at his home in Lebanon, December 24, from disease of the liver, aged 72.

Luther I. McLin, M.D. Detroit Homeopathic Medical College, 1873; first mayor of St. Joseph, Mich., holding that office for four terms; for many years a member of the city council, board of public works, and board of education; died at the home of his son in Twin Falls, Idaho, December 14, from heart disease, aged 62.

Eugene Clarke Goodloe, M.D. Vanderbilt University, Nashville, 1897; of Demopolis, Ala.; a member of the Medical Association of the State of Alabama; and Tri-State Medical Society of Alabama, Georgia and Tennessee; local surgeon of the Southern Railway; died in an infirmary in Selma, Ala., December 25.

George Alvin Weida, M.D. New York University, New York City, 1888; of Frederick, Pa.; a member of the American Medical Association; twice a member of the Pennsylvania legislature; died suddenly in a snow drift from heart disease, while making a professional call, December 30, aged 43.

Wallace Erie Edgerton, M.D. State University of Iowa, Iowa City, 1880; a member of the American Medical Association; one of the pioneer practitioners of South Dakota; a member

of the local pension examining board of Salem; died at his home, August 11, from cirrhosis of the liver, aged 56.

George Sintzel, M.D. Missouri Medical College, St. Louis, 1878; for thirteen years president of the village council of Niles Center, Ill.; and formerly a member of the staff of St. Francis Hospital, Evanston, and Cook County Hospital; died at his home January 2, from pneumonia, aged 53.

William Wallace Wickham, M.D. Washington University, St. Louis, 1856; a surgeon in the Federal service during the Civil War; for many years a practitioner of South Bend, Ind.; died at the home of his daughter in Crawfordsville, Ind., December 21, from senile debility, aged 89.

Frank Hosford Watson, M.D. Johns Hopkins Medical School, Baltimore, 1903; lecturer and instructor in clinical medicine in Tulane University, New Orleans, and visiting physician to Charity Hospital; died in a sanitarium in Stevens Point, Wis., December 15, aged 31.

William Luther Nolen, M.D. New York University, New York City, 1891; a member of the Medical Society of Virginia; formerly of Chattanooga, Tenn.; founder of the Nolan Hospital; died at his home in Salem, Va., January 1, from heart disease, aged 44.

Frank Colverd Bruce, M.D. University of Vermont, Burlington, 1885; a member of the Massachusetts Medical Society; for several years chairman of the Easthampton, Mass., board of education; died in Northampton, Mass., November 7, from paresis, aged 49.

John C. Ross, Indiana Eclectic Medical College, Indianapolis, 1880; (license, Ind., 1897, years of practice); an eclectic practitioner of Muncie, Ind.; was run over by a freight train and instantly killed, while making a professional call, December 17, aged 65.

Gaston Puchot, M.D. National Medical College, City of Mexico, 1901; (license, Texas, 1909); of Matamoras, Mex.; died in that place, December 1, from a gunshot wound of the heart, self-inflicted, it is believed with suicidal intent, aged 34.

James Forman Pineo, M.D. Bellevue Hospital Medical College, 1877; formerly of West Chester, N. S., and Bennington and Meriden, N. H.; died at his old home in Lower Wolfville, N. S., December 20, from lung disease, aged 65.

James Yates, M.D. Detroit Medical College, 1874; a member of the American Medical Association; health officer of Erin township, Macomb county, Mich.; died at his home in Roseville, December 27, from heart disease, aged 69.

Abram Mullinix, M.D. College of Physicians and Surgeons, Keokuk, 1874; vice-president of the bank of Willow Springs, Mo.; while making a professional call, died suddenly December 28, from cerebral hemorrhage, aged 72.

Henry K. Main, M.D. University of Nashville, 1872; of Dalton, Ga.; formerly of Atlanta; a Confederate veteran; died at the home of a friend in Atlanta, December 27, from cerebral hemorrhage, aged 65.

William N. Heath (license, Ind.); for more than forty years a practitioner of Indiana; at one time auditor of Madison county; died at the home of his daughter in Kokomo, December 30, from nephritis, aged 65.

William Chester Beaman, M.D. Queens University, Kingston, Ont., 1886; a member of the Ottawa (Ont.) City Council and board of health for four years; died suddenly at his home in Ottawa, December 31, from duodenal ulcer, aged 53.

Joseph James Moore, M.D. University of Michigan, Ann Arbor, 1876; a member of the Michigan State Medical Society; died at his home in Farmington, December 28, from cerebral hemorrhage, aged 75.

Charles P. Geudtner, M.D. Rush Medical College, 1896; a member of the Illinois State Medical Society; a specialist on diseases of the eye; died at his home in Chicago, January 5, from pneumonia, aged 44.

Patrick Freebern Gavin, M.D. Harvard Medical School, 1870; Kings and Queens College of Physicians and Surgeons, Dublin, Ireland, 1871; died at his home in South Boston, December 22, from pneumonia, aged 64.

P. Solomon Cote, M.D. Laval University, 1902; of Montreal; for six months a member of the editorial staff of *Le Canada*; a specialist on nervous diseases; died at his home, December 22, aged 52.

Joseph Gilbert Gray, M.D. Medical College of Ohio, Cincinnati, 1909; who was about to open an office in Springfield, Ill.; died at St. Johns Hospital in that city, December 31, from erysipelas, aged 23.

Walter Alfred Smith, M.D. Cooper Medical College, San Francisco, 1907; resident physician at St. Francis Hospital, San Francisco; died in that city, August 14, from lobar pneumonia, aged 29.

Edmund Strachan Pendleton, M.D. Jefferson Medical College, 1854; a member of the Medical Society of Virginia; and a Confederate veteran; died at his home in Iron Gate, Va., December 27.

Charles Quick, M.D. Grand Rapids (Mich.) Medical College, 1906; a member of the Michigan State Medical Society; died at his home in Grand Rapids, December 26, from nephritis, aged 50.

James Thomas Kerrigan, M.D. University of Vermont, Burlington, 1899; formerly of Waltham, Boston; died at his old home in Hudson, Mass., December 9, from abscess of the brain, aged 35.

Benjamin F. Mills, M.D. Willoughby (Ohio) University, 1846; a pioneer practitioner of Rock County, Wis.; died at his home in Baraboo, December 19, from senile debility, aged 88.

Jesse L. Stilwell, M.D. College of Physicians and Surgeons, Baltimore, 1905; of Freehold, N. J.; died at the home of his uncle, near that place, December 17, from diabetes, aged 37.

Richard A. Pinkley (license, Ill., years of practice, 1877); for forty years a practitioner of Illinois; died at his home in Bushnell, December 16, from cerebral hemorrhage, aged 76.

William Wilson Barber, M.D. Eclectic Medical Institute, Cincinnati, 1893; a member of the school board of Cumminsville, Cincinnati; died at his home December 20, aged 39.

Walter Crooks Bowers, M.D. Rush Medical College, 1882; a member of the American Medical Association; died at his home in Decatur, Ill., December 31, from pneumonia, aged 52.

Gustavus M. Cowger (license, years of practice, Iowa, 1886); a veteran of the Civil War; died at his home in Agency, Iowa, July 12, from angina pectoris, aged 72.

Charles Eugene Meader, M.D. Harvard Medical School, 1879; a member of the Massachusetts Medical Society; died at his home in Lynn, December 27, from anemia, aged 57.

John Allen Gunn, M.D. Medical College of Ohio, Cincinnati, 1868; a Confederate veteran; died at his home in Hopkinsville, Ky., December 19, from arteriosclerosis, aged 69.

Daniel I. Avery (license, Mo., 1883); for many years a practitioner of Lebanon, Mo.; died at the home of his brother in Whitehall, Ill., January 1, from tuberculosis.

Charles N. Lake, M.D. Harvard Medical School, Boston, 1895; a member of the American Medical Association; died at his home in Detroit, December 26, from pneumonia.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Industrial Insurance in Germany

Mr. Thomas H. Norton, United States Consul at Chemnitz, Germany, has submitted a report on compulsory insurance among the working classes in Germany which is especially interesting on account of his comments on the effect of this system on the medical profession. He states that while compulsory insurance against sickness and accident as well as insurance for old age has done much to raise the level of comfort for working men and their families, yet it has had a decided effect on the medical profession which is attracting considerable attention in Germany at present. The compulsory insurance system has enabled working men to face the uncertainties of employment and the liability to poverty in old age, has freed them from much of the anxiety and actual suffering which is a part of the lot of the laboring classes in other countries, but it has also deprived a large share of the population of the right to select their medical advisers at will. Physicians are engaged by the officials of the insurance organizations on fixed terms, which are usually far below the minimum rate fixed by law for medical services and which are specifically provided for by contract. "The old-time relations between physicians and patients," says Mr. Norton, "are rapidly giving way to a purely business connection in which the personal equation is of constantly diminishing importance."

There is keen competition among physicians to secure appointments as medical officers of the different insurance companies, while the very low fees paid may tend to encourage perfunctory and inadequate services. The necessity of the attending physician doing his best to win the confidence of the patient as well as of the family and friends of the patient, no longer exists, the physician securing his business by virtue of his appointment as a medical officer of the insurance company and not on account of his patient's confidence in him. On the other hand, there is said to be a tendency on the part of those holding insurance policies to abuse their privilege by sending for a physician for trivial ailments, or by calling him at any hour of the day or night. In the pursuance of his duties as a company physician, it is also necessary for the physician to perform, to a certain extent, the work of a detective, since he is required to detect and report any tendency toward malingering, necessarily an important problem in dealing with working men.

Finally, the enforcement of compulsory insurance has brought about a distinct lowering of the average compensation for professional services. While it is true that a large number of persons formerly treated as charity patients are now compelled to carry insurance, and a certain amount of remuneration is therefore paid by them to the attending physician, it is also asserted that a much larger number, especially of the better class of working men, whose modest fees formerly constituted an important part of the doctor's income, are now furnished with free treatment and that this more than compensates for the additional remuneration received from the first-mentioned class. The tendency on the part of the state is to increase the number of those affected by compulsory insurance, and it is now proposed to require insurance among clerks and employees receiving higher salaries than the maximum established by the present law ($476). Each advance will, of course, increase the number of families affected and will consequently diminish the number of families to which the physician in private practice can look for support.

While the evils pointed out in Mr. Norton's report are undeniable, they are not necessary or essential features of the compulsory insurance plan. That some form of protection for the working man and his family against sickness and old age is desirable and necessary under present economic and sociologic conditions is apparent. That the services of medical men are indispensable in operating such a plan is also evident. This, however, instead of being a disadvantage to the physician, is a distinct advantage, inasmuch as it opens up an entirely new field for his labors, namely, that of examining and rating men who take out insurance or who retire under its provisions. The fact that the medical profession in Germany has allowed itself to be exploited for the sake of the rest of society cannot be charged against the compulsory insurance plan. Had the physicians in Germany been sufficiently alert to see the danger and sufficiently well organized to resist it, the compulsory insurance laws would have proved a benefit to them instead of a disadvantage. The vital point in Mr. Norton's report, as far as it affects the medical profession, is his statement that physicians are engaged by officials of insurance organizations on fixed terms which are "far below the minimum rate usually paid for medical services." It is safe to say that the other employees of the insurance companies do not work for wages or salaries which are "far below the minimum rate" paid for such services and there is no reason why the physician should be made an exception, except that he has allowed himself to be. The fact rather seems to be that the doctor is not used to disposing of his services in bulk. Either as individuals or as a profession, we do not know what price to put on our services and we consequently allow ourselves to be undervalued, except when a personal relation is concerned.

Even if the facts had been recognized in time, however, this exploitation of the German medical profession could probably not have been prevented, since the physicians of Germany were not sufficiently well organized to act in concert and to resist the imposition of inadequate fees. Hence, as has generally been the case in any philanthropic or cooperative scheme, the physician has borne the greater part of the financial burden. Organization, careful investigation, concerted action, and a united position on the question would have made it necessary to pay adequate and reasonable fees for medical services instead of amounts which were entirely incommensurate with the value of the services rendered.

The lesson to us is obvious. If industrial insurance is needed and is feasible, it will doubtless be put in operation in this country. If we would avoid the evils which have fallen on the German physicians, let us see to it we have effective organization so that we may be able to avoid the evils which have befallen our professional brethren in Germany.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Fifth Month—Fourth Weekly Meeting

DISEASES OF THE PANCREAS

HEMORRHAGE OF THE PANCREAS: Pathology. Symptoms.
ACUTE PANCREATITIS: Relation to fat-necrosis. Technic and significance of the Cammidge reaction.
ACUTE HEMORRHAGIC PANCREATITIS: Etiology. Symptoms. Differentiate from perforative peritonitis and acute intestinal obstruction.
ACUTE SUPPURATIVE PANCREATITIS: Etiology. Pathology.
GANGRENOUS PANCREATITIS: Etiology. Diagnosis.
CHRONIC PANCREATITIS: Pathology. Association with diabetes.
PANCREATIC CYSTS: Varieties, Pathology. Diagnosis.
TUMORS OF THE PANCREAS: Varieties, carcinoma, sarcoma, cysts, tubercle, syphiloma. Symptoms. Diagnosis.

Monthly Meeting

Differential Diagnosis and Treatment of Acute Pancreatitis.
Medicinal Treatment of Chronic Gastric Catarrh.
Etiology and Treatment of Chronic Diarrhea.

Society Proceedings

COMING MEETING

Medical Society of State of New York, Albany, January 25.

AMERICAN ASSOCIATION FOR CANCER RESEARCH

Annual Meeting, held in New York City, Nov. 27, 1909

Significance of Ferments in Tumors, with a Digest of Literature

DR. RICHARD WEIL, New York City, presented a report on the antitryptic reaction of the blood, including some original observations. He described the methods hitherto used, pointing out as a serious defect the fact that they were competent to determine only inexactly either the point of total inhibition or of complete digestion. A much more accurate and flexible method was afforded by the viscosimeter, which he had recently adapted to the study of the reaction. The original assertion of Brieger that an increased antitryptic reaction was characteristic of cancer, and occurred in 90 per cent. of the cases, has been amply confirmed by subsequent observers. On the other hand, the same reaction characterizes many of the acute infections, also Graves' disease, chronic tuberculosis, and diabetes. Diagnostically, therefore, although an increased antitryptic index can no longer be considered as typical of cancer, its presence may become a datum of great clinical importance. In the absence of complicating factors, such as tuberculosis, it may determine the diagnosis of cancer in obscure cachectic diseases. In the presence of new growths of questionable character, as in the breast, its presence or absence may be taken as very strong presumptive evidence (from 85 to 95 per cent.) of malignancy or the reverse. Biologically, the reaction appears to be of wide significance, and has suggested many problems. It has been generally held that the inhibition of trypsin indicates the existence of a specific immune body. Dr. Weil cited

a number of experiments in disproof of this view, notably the inhibition of papain by the serum. The source of the hypothetical trypsin which acts as a stimulus to the production of the so-called antitrypsin, which has been located by different authors in the pancreas, the leucocytes and the tissues, was discussed in detail.

DISCUSSION

DR. S. B. WOLBACH, Boston: Is it possible that changes in the viscosity of the blood, such as occur in disease could have influenced the viscosity of the test mixture (gelatin and blood-serum)?

DR. W. T. LONGCOPE, Philadelphia: Has it been possible to formulate any rule, from the observations with the viscosimeter, as to the characteristics of the antitryptic index in various diseases?

DR. RICHARD WEIL: The viscosity of the serum, in the dilution used (namely, 2 per cent.), played no part in the readings, as it coincided with that of salt solution. It has not yet been possible to formulate any general rules as to the characteristics of the antitryptic index in various diseases; but it seems probable that a larger series of observations with the viscosimeter will make this possible.

An Epidemic of Carcinoma of the Thyroid Gland Among Fish

DR. HARVEY R. GAYLORD, Buffalo: This paper is a continuation of a preliminary report made before the society a year ago. It gives details of two epidemics in different parts of the country, and refers to two others. The epidemic referred to last year, which resulted in the loss of 3,500 brook trout, had, during the summer of 1909, begun to involve the brown trout and adult rainbows, so that heavy losses continued during this summer. Among the fish preserved from this epidemic was one with a tumor on the lower jaw, which on section was found to be either an implantation of the thyroid tumor or a metastasis, as the fish so affected had a primary tumor of the thyroid. From this observation it is plain that this tumor may, under given conditions, metastasize, or that it is implantable. In an epidemic in a second hatchery, an analysis of the course of the disease again showed that where fish occupied ponds which received water from ponds containing infected fish, these fish may become infected; and, furthermore, the rate at which the fish become involved increases progressively as the contents of ponds containing infected fish are added to the water which supply the fish. Another observation of importance is the discovery that lots of fish are immune. This is particularly shown in hybrid fish, in which one lot of hybrid salmon one year old were reduced from 1,043 in April to 44 sound fish remaining in August, whereas another lot of yearling hybrid salmon, although badly exposed by being placed in ponds into which the water from infected ponds ran, remained free from the disease throughout. Three lots of Scotch sea trout remained immune, although badly exposed. The only lot of brook trout two years old which were free from the disease was found on a careful analysis of their position throughout their entire life history in this hatchery, never to have been placed where the water from infected troughs or ponds flowed to them. They were placed in the uppermost pond and remained free from the disease throughout the epidemic. These observations on immunity in hybrid fish, in the light of those made by Tyzzer in inoculation of Japanese waltzing mouse tumor, in hybrids from immune and non-immune parents, serve to accentuate the similarity of this disease in fish to cancer in warm-blooded animals.

The disease is found to affect very small fish. A brook trout of the hatch of 1909, three inches in length, was shown with a tumor of considerable size from which it had died. This was the first affected fish from the hatch of 1909, and it had occupied from May until September one of five troughs which had the previous summer contained infected fish. From this it would appear that the contagion can be localized, even to given, small wooden troughs, and that these troughs can retain their infectivity from year to year. In all the epidemics thus far described, occasionally large fish, when exposed, acquire the disease. A land-locked salmon 8 years old, measuring 24 inches in length, developed large tumors, and in two other hatcheries during the past year, epidemics have broken out involving considerable numbers of adult rainbow trout and large adult brook trout. Among the large fish epithelioma of the tongue or the region of the mouth, is not uncommon. Carcinoma of the thyroid produces the most rapid destruction among young fish, frequently diffusely infiltrating the gills and also growing to great relative size in the small fish. The tumor erodes bone, destroys cartilage and infiltrates the muscular structure. The tumor presents varying characteristics, frequently retaining the alveolar type with colloid, again of a strictly adenomatous type, but in all cases with areas of complete malignant degeneration and assuming the characteristics of solid soft carcinoma.

In the study of this interesting form of cancer, the discovery of metastases formation, the evidences of immunity and the influence of blood relationship to susceptibility, show the practical identity of this affection to cancer in warm-blooded animals. The apparent absence of metastasis formation as a criticism was long since applied to mouse cancers and to-day falls to the ground in this affection. The evidence of infectivity and contagion appear to the observer to be conclusive, and when correlated in the evidence of infectivity in cancer in warm-blooded animals should prove the greatest support to the parasitic theory we have yet encountered. The marked evidence of infectivity and contagion found in carcinoma of the thyroid in fish appears to be an accentuation of similar evidence of a less convincing character found in other species. Its accentuation in this disease can be largely explained by the environment and the conditions under which fish are artificially propagated.

DISCUSSION

DR. C. R. STOCKARD, New York City: Many of the infiltration phenomena in these diseased thyroids in fish may be due to the fact that the gland is not encapsulated, and that small follicles often appear among the muscle fibers and loose tissues of the bronchial region. It also seems rather strange to find the thyroid cancer more frequently among the yearling fish than among older individuals, since this is the reverse of what is commonly observed regarding cancer in other animals.

The Structure, Distribution and Variation of the Thyroid Gland in Fish

DR. J. F. GUDERNATSCH, New York City: Since the thyroid gland of *Teleostei* is the seat of tumors it seemed of importance to determine its normal features. It is not a compact, uniform organ as in mammals, but is broken up into numerous single follicles which are more or less closely associated. This disintegration and the distribution of the follicles vary not only with the species but also with the individual. The follicles are located around the ventral aorta and its branches to the gills. We usually find them more densely packed in the neighborhood of these vessels, while toward the periphery their arrangement becomes less dense until they finally lie entirely separated. Their distribution extends as far as the other tissues will allow and they creep into any available place. They even invade other tissues, for instance, muscles, as in trout. Laterally the follicles reach out along the gill arteries, and if they find an especially open passage along the vessels they may then invade even the gills. The latter case is found in trout, in which genus the follicles especially show the tendency to break off from a central portion and to spread out toward the periphery. This scattering of the follicles is made possible by the fact that there is no capsule around the thyroid, and since this diffuse arrangement is found in all species examined we must consider it to be the normal condition. The thyroid gland of the *Teleostei* is thus a rather undefined organ in its shape having the tendency to give up its unity and to break up into numerous small parts. This peculiar feature renders it difficult to distinguish between a main body and detached follicles, as we cannot charply define the main body. The limits between a normal thyroid and a beginning hypertrophy are also rather indistinct, since we do not yet know how extensively the organ may normally develop in the number of its follicles or their wide distribution. This study of the thyroid demonstrates that the follicles may normally be present in regions which might be supposed to contain secondary thyroid tumors, while as a matter of fact such misplaced structures would be a part of the primarily diseased gland.

DISCUSSION

DR. JAMES EWING, New York: I think that the study of Dr. Gudernatsch, showing the wide distribution of normal islands of thyroid tissue in fish, throws much light on the dissemination of tumor nodules in fish suffering with thyroid disease. While it does not affect the conclusion that in some of these animals genuine tumors of the thyroid do arise, it indicates that many of the local extensions of these tumors should not be regarded as a sign of metastasis and malignancy.

DR. HARVEY R. GAYLORD, Buffalo: I have long recognized the necessity of determining the anatomic relations of the thyroid in fish, and have planned to make such a study; but I now feel that the present study has furnished valuable information in this field. I suggested in only a casual way that the anatomic relations of the thyroid in fish are, perhaps, not favorable to the early development of metastasis. The wide distribution of the islands of normal thyroid is, doubtless, partly responsible for the early extensive growth of these thyroid tumors, which often results in the death of the fish from asphyxia before metastasis can occur.

Demonstration of Tumors in Fish

DR. LEO LOEB, Philadelphia, exhibited specimens of fish tumors, which he had received through the kidness of Mr. C. Harold Drew, in Plymouth, England. Among these were two cases (an adenocarcinoma of the liver of the rainbow trout and a tumor of the mesentery of a plaice) in which the same tumors were found in different individuals of the same species; and in the first case, at least, these two fishes were found in the same hatchery, among a relatively small number of fishes. These observations, together with another observation, by Marianne Plehn, found by Dr. Loeb in the literature of the subject, prove that the so-called endemic occurrence of tumors is not rare among fishes; and that it is not limited to the carcinoma of the thyroid in trout. An accidental occurrence could be excluded in these cases, as well as in previous observations made by Dr. Loeb in rats and cattle. In the case of the so-called endemic occurrence in rats, hereditary conditions are probably responsible for these conditions; but whether or not the same cause underlies the corresponding findings in fish, cannot be decided at present.

Teratoma Testicle and Its Derivatives: Two Rare Cases

DR. JAMES EWING, New York: Primary lmyphosareoma of the testicle was first described by Malassez and has since figured extensively in the French literature. Chevassu, an experienced French observer, has recently concluded that a primary tumor of this type does not occur in the testicle but that all such testicular tumors are secondary to original tumors in other parts of the body. This view is to some extent borne out by the observations of Debarnardi, who reported three cases of lymphosarcoma testis, at least two of which were clearly secondary, while the third was of doubtful origin. In the following case the clinical history and pathologic examination clearly indicated the existence of a primary lymphosarcoma of the testicle. The patient was a well-nourished boy of 4½ years. The parents first noticed a swelling of the right testicle about July 1, 1909, which in three weeks reached a size of a small hen's egg and gradually involved the inguinal lymph nodes and the overlying skin. About July 30 the tumor, skin and three inguinal nodes were removed. The wound healed well, but after two weeks the child became anemic and began to lose flesh. There was slight fever, but no external lymph node enlargement. Late in August several firm nodules appeared in the skin of the face and chest. The child died September 15, twelve weeks after the first symptom.

The autopsy showed the lymph nodes at the bifurcation of the aorta enlarged to the size of marbles. A few fine pinpoint nodules were present in the lungs and some larger ones in the liver. These kidneys were diffusely infiltrated in several areas. The spleen was moderately enlarged. The general lymph nodes were unaffected. There was no leucemia. The tumor arose in the corpus highmori and epididymis pushing widely apart the tubules of these structures. The testicle proper was separated from the tumor by a fibrous capsule and was uninvolved. In the lymph nodes and in the main tumor the tumor cells were large lymphocytes. In the skin, liver, lung and kidney there were only small lymphocytes. That the tumor was primary in the testicle was indicated by the clinical history, the relatively large size of the original tumor, the gradual extension up the inguinal chain and the comparatively slight involvement of the general lymphatic system.

The second case was a teratoma of the testicle composed of epidermoid cysts, adult thyroid, a fibromuscular and glandular organ resembling the uterus, and carcinoma with lymphoid stroma. The tumor had been removed from a subject of 35 years who for two years had noticed a gradual enlargement of the organ. The tumor was as large as a goose egg. It contained three communicating cysts lined by stratified squamous epithelium and filled with sebaceous material. The muscular organ was surrounded by a fibrous and fat capsule. It was an elongated structure lined by glandular tissue similar to the uterine mucosa surrounded by thick irregular bands of smooth muscle tissue. Several cross sections of this organ appeared in an area of 4 cm. in breadth. About this organ lay three large islands of adult thyroid tissue. The main mass of the tumor was composed of large cell carcinoma with lymphoid stroma. The small remnant of testicle was displaced to the upper posterior pole of the tumor.

Thyroid tissue probably has not previously been described in testicular teratomata, although common in ovarian teratomata. Possibly the organ described as uterus was a stomach or prostate. The carcinomatous portion may have been one part of an original single tumor. The occurrence of a peculiar type of carcinoma in this teratoma might indicate that when this type of carcinoma occurs alone in the testicle, as it often does, it is nevertheless of teratomatous nature, other portions of the teratoma having failed to develop. The carcinoma possibly originated from fetal entodermal epithelium, and the lymphoid stroma may have been an integral part of the tumor.

(*To be continued*)

OHIO ASSOCIATION OF MEDICAL TEACHERS

Fifth Annual Meeting, held in Columbus, Dec. 27, 1909

There were about fifty teachers, representing various schools in Ohio, present at the meeting, and a very interesting program was carried out.

DR. E. O. SMITH, secretary of Ohio-Miami Medical College, read a paper on "Entrance Requirements," in which he advocated more uniform and higher standards of entrance, holding that while present preparatory schools were so varied in their standards the state medical board should hold entrance examinations for all applicants.

DR. JOSIAH MEDBERRY, professor of anatomy, Starling-Ohio Medical College, reviewed the work of the "Freshman Year" with especial reference to the teaching of anatomy and the elimination, in this year, of incompetent students.

DR. EDMUND M. BAEHR, professor of physiology, Ohio-Miami Medical College, read an interesting paper on the "Basel Nomenclature." This paper was ably discussed by Prof. S. S. Sission of the Ohio State University; both he and Dr. Baehr agreeing that this nomenclature has special merit and should be more generally used.

DR. G. W. SPENCER, professor of physiology, Cleveland Homeopathic Medical College, urged the importance of more practical "Methods in the Teaching of Materia Medica and Therapeutics."

DR. W. D. INGLIS, professor of obstetrics, Starling-Ohio Medical College, outlined in detail the method employed by him in "Section Teaching of Obstetrics," and the importance of thorough preparation of students in this branch.

DR. A. R. BAKER, professor of ophthalmology, Cleveland College of Physicians and Surgeons, in a paper on "The Teaching of Ophthalmology," urged that a larger use should be made of the dispensary and hospital, and that practical instruction should be begun as early as the sophomore year.

DR. J. K. SCUDDER, secretary and treasurer of the Cincinnati Eclectic Medical Institute, read a paper on "Medical College Management," in which he emphasized the importance of endowments for medical colleges, and of larger hospital facilities. Dr. W. J. Means, professor of surgery, Starling-

Ohio Medical College, and chairman of the judicial council of the American Association of Medical Teachers, and President Charles W. Dabney of the University of Cincinnati, took part in the discussion.

DR. W. B. WHERRY, professor of pathology, Ohio-Miami Medical College, urged the "Value of the Laboratory Method to the Medical Student," holding that it is through this agency that the most valuable instruction is to be given and that it should be carried throughout the medical course.

DR. J. H. JACOBSON, professor of gynecology and clinical surgery, College of Medicine of Toledo University, demonstrated "Some Aids to Didactic Teaching," among them being clay modeling, lantern slides and mimiographic drawings.

DR. C. LEE GRAPER, professor of materia medica, Cleveland College of Physicians and Surgeons, advocated greater "Thoroughness in the Teaching of Materia Medica and Pharmacology in our Present-Day Medical Schools."

Election of Officers

Dr. Frank Winders, Columbus, Starling-Ohio Medical College, was elected president for the ensuing year, and Dr. Ernest G. Zinke, Ohio-Miami Medical College, Cincinnati, vice-president. Dr. Elmer I. McKesson, Toledo University College of Medicine, and Dr. Charles W. McGavran, Starling-Ohio Medical College, Columbus, were reelected secretary and treasurer, respectively.

Columbus was chosen as the place of next meeting which is to be held on Monday, Dec. 26, 1910.

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION

Nineteenth Annual Meeting, Held at Omaha, Neb., Dec. 20-21, 1909

(Continued from page 150)

Diffuse Septic Peritonitis

DR. BYRON B. DAVIS, Omaha: The decrease in the mortality of acute spreading infection of the peritoneum is due to the recognition of three important factors. First, the chief absorption from the peritoneum is carried on by the diaphragm, seconded by the great omentum. Second, the Fowler position with free tubular drainage from Douglas' cul-de-sac has proved efficient in turning the current in the opposite direction, thus removing the toxins harmlessly. The third important contribution was made by Dr. Murphy in the use of normal salt solution by his efficient method. There are also other factors which must be recognized in order to get the best results. As the transition from the older methods to those of the present was slower with some of us than with others, I can only include in my series of cases those patients operated on since January, 1907. After the exclusion of cases which cannot rightly come in the category of those under discussion, my records show that since January, 1907, I have operated on 39 patients with diffuse septic peritonitis, with 3 deaths. Thirty-five cases were due to appendicitis, with one death; 2 were caused by the perforation of a typhoid ulcer, with 1 death; 1 was a case due to puerperal sepsis, with an immense amount of free pus in the peritoneal cavity. This woman recovered. And there was one case of perforating duodenal ulcer which ended fatally. Twenty-eight were males, and 11 were females. The average age of all the patients was 26 years and 10 months. The youngest patient was a little boy, aged 5 years, and the oldest was a woman, aged 48 years, the only fatal case due to appendicitis. The appendix was removed at the primary operation in 32 cases. In the remaining 3 the condition was so serious that it was not thought prudent to attempt more than simple drainage, and the appendix was left. Two of these patients had their appendices removed by subsequent operation. The third recovered and is still carrying his appendix, but intends entering the hospital to have it removed this winter. In 4 cases fecal fistulas persisted which were cured by subsequent operation. There have been 2 patients with ventral hernia operated on, and I know of 2 others with hernia which will be operated on, if troublesome. There are probably others, as I believe ventral hernia is frequent after prolonged drainage. There has been no case of intestinal obstruction following these operations. The period of convalescence has in a few cases extended over a number of weeks, and in 2 of them 4 and 5 months respectively. In the greater number the convalescence has been comparatively brief, not longer than one expects after opening an appendiceal abscess.

A Scientific Inquiry Into the Present Treatment of Peritonitis

DR. ARTHUR E. HERTZLER, Kansas City, Mo.: In this paper I review the present treatment of diffuse peritonitis, taking up the various factors which go to make up this treatment and examine them in the light of established facts in abdominal physiology and pathology. I conclude that the explanation of their mode of action has but limited scientific basis. Most of the papers lauding the effectiveness of the modern treatment are unaccompanied by case reports, but those which are so elucidated show that the favorable prognosis is dependent largely on the fact that cases are included in the statistics which are in no sense diffuse. The present improved prognosis is dependent on earlier diagnosis of the disease, and a more accurate determination of the exact anatomic relation of the disease, making it possible to accomplish the necessary operative work with the least possible traumatism and loss of time. The Fowler position and the introduction of fluids into the body, either by vein or rectum, has but a minor influence in the determination of a favorable outcome. In order to facilitate the grouping of cases of peritonitis I propose the following classification: 1. The perforative. This group includes those cases in which there is expelled into the peritoneal cavity some of the contents of the hollow viscera without there having been any previous protective reaction on the part of the peritoneum. 2. The progressive, in which there is escape of visceral contents into the peritoneal cavity unprotected by adhesions, but in which the peritoneum has undergone a protective reaction. 3. Imperfectly encapsulated. This type joins the preceding without a a sharp line. Adhesions are present in some areas, but there is extension in some direction, *e. g.*, along the cecum or into the pelvis in appendicitis. 4. The peritoneal abscess, in which there is perfect encapsulation of the infected area. All peritonitides are diffuse in the beginning and the determination of the group to which they will ultimately belong depends on the relation of the factors of virulence of infection and the powers of resistance. The earlier operations are done, therefore, the greater the number of patients who will be operaed on before the condition has had time to become encapsulated.

DISCUSSION ON PERITONITIS

DR. R. C. COFFEY, Portland, Ore.: In acute perforative conditions the point of drainage will depend largely on where the perforation has taken place. In a perforation of the gall-bladder or duodenum the drainage is usually better in the right flank. Again, in perforation of the stomach near the median line, or when a patient has been transported a distance and rolled from side to side, it is essential to use the Fowler position, because in putting patients straight up the fluids will always gravitate to the bottom. Another important feature is drainage at the point of suture of the opening. If one sutures a perforated intestine and that intestine is allowed to come in contact with drainage, there is likely to be a fecal fistula; therefore, it is important to make drainage remote from the point of suture. It is also important to lift the intestines away from the drain and not insert the drain irrespective of its relation to the intestines.

DR. VAN BUREN KNOTT, Sioux City, Iowa: I agree with Dr. Coffey that the Fowler position has had more to do with our recent success in the treatment of diffuse septic peritonitis than any other method of treatment which has been employed, although this is somewhat in opposition to the opinion of Dr. Hertzler, who maintains that early diagnosis and prompt treatment should receive the credit. In 1902, I was deeply impressed by Fowler's paper and the position advocated by him in cases of acute peritonitis. Up to this time most of my patients with diffuse septic peritonitis died, but as soon as I began to employ the Fowler position they commenced to recover. Shortly after this I read a paper before this association advocating a stab wound in the median line of the lower portion of the abdomen and drainage through the rectovesical pouch and drainage through the vagina in cases of diffuse sep-

tic peritonitis. Since then I have invariably employed this method with gratifying results.

DR. DANIEL N. EISENDRATH, Chicago: There are points in the pathology and etiology of peritonitis which neither Dr. Davis nor Dr. Hertzler referred to, and as a few of these cases have come under my observation during the past three or four years it might be well to speak of them here. These are the cases in which there is genuine peritonitis, so far as the pathology is concerned, without visible perforation of the appendix or any other viscus. They are not the cases in which a perforation of the duodenum or stomach has been overlooked, but cases in which streptococci migrate along the lymph channels through the appendix wall and get into the general peritoneal cavity in that way. In looking up a series of cases at the Michael Reese Hospital in the past 10 years, I find there were 2 such cases of my own, and 5 others in the practices of Drs. McArthur, Andrews and Greensfelder. In addition to these, a number of cases have been reported in the literature. We overlook in little girls a general peritonitis from infective salpingitis. Riedel has recently called attention to this, and has held autopsies on nine little girls who had died of general peritonitis in spite of operation. He found no perforation of the appendix, but simply a marked and intense salpingitis.

DR. CHARLES H. WALLACE, St. Joseph, Mo.: We notice in these cases of perforation of the appendix or perforation of any hollow viscus, that if we operate within the first 24 or 48 hours, the question of drainage is a minor one if we remove the disturbing element and close the opening. We know that there is a class of cases that become so septic that we get no drainage, it matters not what we put in for the purpose. The wound looks like a wound in a cadaver; there is no exudation of serum, and in this class drainage fails to accomplish anything because the patients are beyond all hope. But in the cases of chronic abscess drainage is of great value.

Further Observations on Enterostomy and Its Technic

DR. JOHN PRENTISS LORD, Omaha: In this paper I report 4 fatal cases in addition to the 4 successive successful cases mentioned last year. In one, the enterostomy was done for typhoid perforation peritonitis, death being due to the extension of the peritonitis. Patients 2 and 3 were operated on for appendicitis and peritonitis, death resulting from ileus due to peritonitis. In Patient 4 the condition was due to spastic ileus. The drainage was practically *nil* and the condition persisted. Enterostomy was recommended above the line of suture as a vent in resections of the distal half of the large bowel in order to prevent distention from gas which is responsible for the greater number of failures in the suture of this portion of the large intestine. The simple technic by three purse-string sutures about a large catheter is an easy, quick and ready means of draining the bowel of gas and feces. It is life-saving, and may save life in some otherwise hopeless cases of obstruction due to peritonitis. The fatal cases reported were extreme ones, and the operation was done as the only remaining recourse.

(*To be continued*)

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION

Twenty-second Annual Session, held at Hot Springs, Va., Dec. 14-16, 1909

(*Concluded from page 152*)

Pancreato-Enterostomy

DR. R. C. COFFEY, Portland, Ore.: The drawback to the development of pancreatic surgery has been that during embryologic development the pancreas has been rotated out of the peritoneum. The peritoneum produces an exudate when injured which serves the same purpose as callus after a fracture. The fat-splitting ferment of pancreatic juice does not readily penetrate peritoneum, but is serious when spilled in the retroperitoneal areolar fat spaces or between the layers of the mesentery or omentum. The problem to be solved in direct pancreatic surgery is to supply peritoneum to the operative field. This is best obtained from the outer coat of the intestine by inversion. The lumen of a single intestine is too small. Therefore, it has been necessary to throw the two lumena of an intestinal loop into one which, after inversion, gives an ample peritoneal canal into which the cut end of the pancreas is implanted. Using this method the following classes of operations were done:

The tail of the dog's pancreas was cut in two and each cut end implanted into a separate loop of jejunum. Of four dogs recovered, each showed perfect union between pancreas and intestine; but no pancreatitis nor necrosis. In isolating the tail of the pancreas the pancreatic duct was found patent and delivered into the intestine. The connected end of the pancreatic duct was closed by a thin tough film, the juice all going through the duct of Wirsung. The same thing occurred when the duct was ligated by a linen ligature but not cut, for the ligature was circumvented in all cases, and the juice was freely delivered back into duodenum through the duct which was established around the ligature. By ligating and cutting both ducts of Wirsung and Santorini and interposing omentum, and implanting the cut end of the tail, the juice of the other tail and body was freely delivered into the loop of jejunum through the implanted tail and its duct maintained.

The head of the pancreas and one tail and the duodenum were successfully removed in two stages. First, the bile duct was transplanted to intestine lower down and a gastroenterostomy was done with excision of pylorus. Second, two weeks later the body and one tail of the pancreas and section of duodenum were removed and the remaining tail implanted into the jejunal loop. The results were the same as in the previous cases. In all five cases the specimen showed enormous dilation of the common and hepatic ducts, and in one instance the bile duct was almost as large as the duodenum, and almost as thick. The communication with the intestine was free enough to admit the end of the little finger, the distention evidently being due to intraintestinal pressure; therefore an indirect method was devised, which consisted of running the duct immediately under the mucous membrane for an inch before bringing it inside. The results in the three specimens removed, two of which were of two months' standing, showed that a perfect valve had been formed and that no dilatation had occurred, the ducts being entirely normal in size and thickness.

Encouraged by these results, I am now conducting a series of experiments in which the ureter is implanted into the large intestine in the same manner with the hope of preventing ascending infection here. Direct implantation of the stripped pancreatic duct was tried in six cases. While one dog lived to be killed on the twenty-fourth day and was in good health, it was found that the duct connected with the intestinal lumen only by a fistula. Four of this group of dogs died before the sixth day, showing pancreatic necrosis. One died on the tenth day. One fact stood out in all the six cases, namely, the pancreatic duct dies as soon as it leaves the pancreas, thus leaving the inference that the pancreatic duct probably receives most of its nutrition from adjacent pancreatic substance, and will not bridge the chasm between the gland and intestine, as is done in the case of the bile duct and ureter.

DISCUSSION

DR. JOSEPH C. BLOODGOOD, Baltimore: The cause of death in acute hemorrhagic pancreatitis has been said to be due to trypsin and perhaps other ferments free in the peritoneal cavity, and present in the blood, and these ferments produce disseminated fat necroses. If one can make a diagnosis of acute pancreatitis the abdomen should be opened and the fluid allowed to flow out and the region of the pancreas drained to prevent further intoxication with these ferments. The question of the operative treatment of acute hemorrhagic pancreatitis is settled, and that is, evacuation of the peritoneal exudate and drainage of the pancreas.

DR. STEPHEN H. WATTS, Charlottesville, Va.: During the present year I have had two cases of acute pancreatitis and one of the sub-acute variety. One of the most interesting things in these cases is the presence of hemorrhage in acute pancreatitis, and it is a question in my mind as to the relation of this hemorrhage to infection in the gland, as to whether or not hemorrhage precedes or follows infection or pancreatitis. Dr. Ransohoff has not found infection in his early cases, as the

cultures have been negative. It seems as if in many of these cases there is an arteriosclerosis which may give rise to the first hemorrhage, and that the blood subsequently becomes invaded through the intestine or biliary tracts.

DR. ROSWELL PARK, Buffalo: At the time President McKinley was shot we did not know much about the surgery of the pancreas, and when seeking an explanation for the peculiar necrosis which we found in his case, I suggested that in all probability the wound of the pancreas had to do with the subsequent course of events. I really believe now that this wound of the pancras had much to do with it. I believe that unfortunate instance directed surgical attention to the surgery of the pancreas in a way which it would not have done had not that sad event happened.

DR. CHARLES H. MAYO, Rochester, Minn.: I was impressed by Dr. Guerry's statement regarding cholecystenterostomy. No doubt this operation should be more frequently done. If jaundice is present, with hardening of the pancreas, and no gall-stones, then we should at once think of the advisability of doing this operation. The question of doing it in simple inflammatory conditions, such as cholecystitis, is something for the future to decide. These are not the gall-bladders that we would remove to-day, but they are the ones that lead to further operation.

DR. H. A. ROYSTER, Raleigh, N. C.: Two months ago a man of 70 consulted me, giving a typical history of gall-stones. He had had jaundice only once, and that had disappeared entirely. Examination of the urine three days before operation showed a well-marked reaction to sugar. I opened the gall-bladder, removed 180 gall-stones, and drained in the usual manner. The head of the pancreas was enlarged. One week after the operation the sugar disappeared entirely from the urine and has not returned.

DR. WALTER C. G. KIRCHNER, St. Louis: Of five cases of pancreatitis I have seen three which were of the suppurative type, and resulted fatally. In two of these cases a diagnosis was made, but the conditions were so fulminating that operative procedure did not seem to be indicated, or by the time the patient reached the hospital his condition did not warrant operation. In one case in which a pathologic diagnosis was made of hemorrhagic pancreatitis there was no hemorrhage in the abdominal cavity, but the pancreas itself was involved. This patient gave all the acute symptoms of pancreatitis, and at the autopsy an ulcer of the duodenum was found, which had a direct communication with the head of the pancreas.

DR. GEORGE W. CRILE, Cleveland: In making cultures from the gall-bladder in these cases of chronic infection or of chronic pancreatitis, I have seen much better results from the use of autogenous vaccines than from drainage alone, that is, following the use of autogenous vaccine plus the drainage. Furthermore, large doses of utropin (hexamethylenamin) for a certain period of time are of value. Again, in cases of acute hemorrhagic pancreatitis I would call attention to the value of nitrous oxid anesthesia.

DR. JOHN C. MUNRO, Boston: Dr. Guerry's paper reminds me of a case in which I did a cholecystenterostomy six or eight years ago for a lesion at the ampulla, but which proved to be a case of chronic pancreatitis. A diagnosis now can undoubtedly be made both in the chronic and in the acute forms of pancreatitis in a fair number of cases. I have had a number of acute cases of pancreatitis, and in a fair proportion of them have been able to make an accurate diagnosis before operation. The type of jaundice both in the acute and chronic forms is rather significant, although it is not an absolute sign on which to depend. I favor operating in very acute cases.

DR. O. H. ELBRECHT, St. Louis: I would like to report briefly a case which differs somewhat from those mentioned. It was a case of chronic pancreatitis, the patient coming from an insane asylum, presenting the picture of an acute gall-stone attack, with profound icterus. The pain was severe. The case was diagnosed as gall-stones, with probably the escape of the gall-stone through the intestinal wall. A definite lump could be felt in that region, and we found dense adhesions everywhere, and an immensely distended gall-bladder. The gall-bladder was drained. As the patient was in a bad condition we did not care to explore the region of the pancreas, as it was not suspected at the time. The patient died the next day, and autopsy revealed the case to be one of primary tuberculosis of the pancreas. Sections were made from an ulceration at the tip of the pancreas and found to contain innumerable tubercle bacilli.

Frequency of Cancer

DR. ROSWELL PARK, Buffalo: Cancer is one of the most important problems which confront the medical profession to-day. I believe that cancer is on the increase as a disease of modern life. When I began work in this direction there were in New York State 14,000 deaths from tuberculosis each year and about 5,000 deaths in cases of cancer. Now, the mortality from tuberculosis has been reduced to 11,000 or 12,000 cases a year, while the mortality from cancer has risen to nearly 8,000. Studies have established the fact that cancer is prevalent in certain localities and in certain houses, and that there are certain places where cancer is more prevalent than in others, and that in a considerable number of houses several deaths from cancer had taken place. With regard to heredity, it is now stated as a fact that the disease is not transmitted by inheritance; but there is a possibility of the transmission of predisposition. This is an important question for the laity and for us. The infectivity of cancer is quite generally established. Last year, at the meeting of the International Congress of Surgeons in Brussels, the question of cancer was discussed for three separate days, and some 300 who were present out of a membership of 600, I found the majority of surgeons present believed in the infectivity of cancer. There are still some doubters of this theory. The very fact that metastases occur during cancer is the best demonstration of its infectivity, and for me every instance of metastases in a given case is an expression of a reinfection from the original source. As to the contagiousness of cancer, we have far more proof for its contagiousness than leprosy, or some other diseases that are considered more or less contagious. The early diagnosis of cancer is difficult, and in many instances impossible. Cancer has no definite symptomatology. If cancer could be early diagnosed or recognized, and if it were accessible to our present means of attack, and if it were thoroughly removed it could be curable, but there are "ifs" standing up in tremendous proportion, and they are insuperable, apparently.

Suture of the Recurrent Laryngeal Nerve

DR. J. SHELTON HORSLEY, Richmond, Va.: After a thorough search of the literature I have been unable to find a report of any case in which the recurrent laryngeal nerve was sutured. Considerable experimental work has been done, chiefly by those interested in veterinary surgery, in which the left recurrent laryngeal was divided and implanted higher up in the vagus. Most of these experiments have resulted successfully, so far as restoring the function of the laryngeal muscles supplied by the left recurrent nerve is concerned. I here report a case in which the left recurrent was injured by a bullet wound. The patient was referred to me about three months after the injury. The individual was examined by a laryngologist, and all the muscles supplied by the left recurrent laryngeal were found completely paralyzed. An incision was made along the anterior border of the sternomastoid muscle and the injured nerve was easily found in the groove between the esophagus and trachea. The diseased portion was excised, except a small filament consisting of the posterior part of the nerve sheath. The ends of the nerve were brought together with a single suture of No. 0 chromic catgut in a fine curved needle. Some muscle tissue was drawn over the sutured nerve. The wound healed by first intention and the patient left the hospital nine days after the operation with no improvement in voice or in breathing at that time. The improvement was gradual, however, and two reports from a laryngologist were made after the operation. The first about two months after operation showed improvement in the muscles and the second report, fifteen months after the operation, stated the laryngeal muscles supplied by the left recurrent laryngeal nerve had fully recovered. The case is apparently unique.

Treatment of Wounds of the Heart; with Report of Two Cases

DR. WALTER C. G. KIRCHNER, St. Louis: In reviewing the subject of injuries to the heart I wish to say that at the St. Louis City Hospital there have been five cases of cardiorrhaphy with three recoveries. I here report two of my own cases, one patient dying four hours after the operation, the other making a successful recovery. In the first case there were two wounds of the ventricles, and in the second there was a wound of the heart one and three-fourths inches in length, which penetrated the left ventricle. From these cases I draw the following conclusions: The heart may be manipulated without serious injury to the organ and is amenable to surgical interference and procedure. Hemopericardium with heart tamponade is a serious complication and demands prompt drainage of the pericardial sac. In suspected injuries to the heart the wound in the chest should be carefully explored so that the extent of the injury may be determined, and in cases of doubt, exploratory pericardiotomy is indicated. Small wounds of the heart may heal spontaneously, but in all cases in which hemorrhage from the heart exists, the wound should be promptly sutured. In operations on the heart, when pulsations suddenly cease, massage of the heart and artificial respiration should be tried as aids in resuscitation. With a minimum amount of anesthetic the healthy lung is capable of performing its function, though to a less extent, even when the pleural cavity is exposed. Time is an important factor in injuries to the heart, and an early diagnosis should always be made. The immediate treatment should be directed to the control of hemorrhage and shock. The chief remote complications result from infections of the pericardium and pleura. In treating injuries to the heart the surgeon should have in mind a definite plan of attack, and the kind of flap to be used in approaching the heart should be determined by the nature of the wound in the chest.

Circumscribed Serous Meningitis of the Cord

DR. JOHN C. MUNRO, Boston: An interesting paper on this subject, by Spiller, that appeared in the *American Journal of the Medical Sciences*, January, 1909, explained a condition which I had observed a number of times at operation and for which I had previously obtained no satisfactory explanation. At the time of my earlier cases (1897), I reported the findings to pathologists who not only gave me no light on the subject but even questioned the existence of the lesion. In a small collection of cases of laminectomy reported at the American Medical Association in 1904 I called attention to one with syringomyelia and to another diagnosticated as subacute fracture-dislocation, in which I found a "collection of clear fluid under a distinct arachnoid membrane," in which the removal of this fluid produced marked amelioration in the pressure symptoms. This phenomenon and the relief that followed the removal of a soft extradural myeloma in another case led me to say that there is a something that produces grave paralysis that is demonstrated clinically, which appears totally inadequate and for which we have no corresponding experimental nor post-mortem explanation. That the lesion had been observed by Krause and a few others was unknown to me at the time. A clinical lecture by Horsley appearing soon after Spiller's paper has stimulated me to report my own cases in detail in the hope of arousing surgical interest in a class of patients who otherwise would be condemned to a slow, inevitable and distressing death. The pathology is that of the living rather than of the dead, as the condition has been revealed in the majority of instances at the time of operation for suspected tumor. A definite thin pial membrane is forced through the dural wound and when it is opened clear fluid escapes under abnormal pressure. This pial membrane is so definitely an entity that it may be dissected out as a cyst. The cord may or may not be flattened by this local collection of fluid.

No definite cause is known for the lesion. Trauma, syphilis, caries, tuberculosis, glioma, influenza, gonorrhea have all been more or less intimately associated with the lesion. In other cases nothing can be found as the primary cause. The important thing for us to recognize clinically is the fact that such a condition may exist and that laminectomy is the only rational treatment. In uncomplicated cases the outlook is most encouraging. In complicated cases most distressing suffering can be relieved. There is always pain which at times is intolerable. It may start as a lumbago; it may be girdle-like; it is diffuse and not referred to one nerve root. Paralysis begins generally as weakness of the lower limbs. Spasticity is almost always present and sooner or later there is paraplegia sufficient to render the victim bedridden. Some times there is urinary and fecal incontinence; sometimes the upper extremities are more or less affected. Spasmodic contractions, excited by a light touch, are often most distressing. In simple cases the limbs are well-nourished, the muscular power is good and there is no trophic disturbance. The reflexes vary among individuals and in the same case. Anesthesia may be absolute or very slight. It varies in different regions in the same case and from time to time. So also may the other phenomena of sensation. The onset may be short, a few days after traumatism, and years in other types. Laminectomy by relieving the localized pressure cures the uncomplicated case. Lumbar or local puncture is futile.

Abdominal Cesarean Section for Puerperal Eclampsia

DR. LANE MULLALLY, Charleston, S. C.: I wish to report four cases of puerperal eclampsia. The first two patients were brought into the hospital with the usual history of eclampsia, each having had convulsions for about six hours before being admitted. The first was delivered under anesthesia by dilatation, instrumental and manual and high forceps, and the second by similar dilatation and version, each case occupying from one to two hours. In the first case convulsions continued for twelve hours, when the patient died. The second patient had several convulsions after delivery and recovered. The third, a multipara with considerable scar tissue in the cervix, was anesthetized and an hour or more uselessly spent in attempted dilatation. Finding it impossible to dilate the cervix, I decided on abdominal Cesarean section and delivered the child in seven minutes. The whole operation when completed occupied twenty-seven minutes. The case was a six-months' pregnancy and the child was dead before the operation was begun. In the fourth case of full-term pregnancy the woman had convulsions every fifteen minutes. In this case I did an abdominal Cesarean section at once, delivered the child in six minutes, closed the wound and the patient was returned to the ward in twenty-six minutes from the time operation began. Recently abdominal Cesarean section, with the perfect technic of the present day, has materially lowered the maternal mortality and the operation is selected not only on this account, but also because it offers better advantages in saving the life of the child than many of the intrapelvic methods of delivery. The operation is far less dangerous than high forceps version and, I believe, vaginal Cesarean section. Granting rapid evacuation to be the rational treatment, I contend that it is best accomplished by abdominal Cesarean section.

President's Address: Neurasthenia and Surgery

This paper by Dr. Stuart McGuire, Richmond, Va., will appear in THE JOURNAL.

The Diagnosis of Hyperthyroidism or Exophthalmic Goiter

DR. CHARLES H. MAYO, Rochester, Minn.: An effort has been maintained to consider hyperthyroidism a finished product to be diagnosed as such only within the narrow limits of the imperfect descriptions of the few cases described by Parry, Graves and Basedow nearly a century ago. It was not considered that the thyroid played a more important part than the heart or nervous system. Many marked cases failed in some particular and were classed as fruste or pseudo until the lacking symptom appeared. There is a present tendency to drop some of the old classifications and acknowledge that there are various stages: acute, chronic, mild, severe and irregular forms based on an increase, probably with some changes of secretion and its delivery. The laboratory findings should show an increase in parenchyma, (a) more cells in the alveoli, (b) more alveoli, (c) papillomatous increase

of cells in existing colloid goiter. These changes may be general or in scattered areas. Terminal degeneration of essential organs follows degeneration of the gland in the advanced cases. In this stage the patient may be improved and the disease checked, but not cured by operation. Forms of myxedema are not uncommon in patients who have survived the hyperthyroidism until degeneration destroyed the major portion of the gland. Eye symptoms and heart signs must be differentiated from chronic Bright's disease, and from myocardial changes. Leucemia of the neutrophilic polymorphoneuclears and the percentage and absolute increase in the lymphocytes should be looked for as diagnostic laboratory aids of some importance. An early diagnosis has become more important since surgery invaded this field than when it was purely medical, in order that a prognosis of the probable result of an operation can be given. In some cases this may mean before eye changes appear, and in others before the goiter becomes a prominent feature.

An Experimental and Clinical Research into Nitrous-Oxid and Ether Anesthesia

DR. GEORGE W. CRILE, Cleveland, O.: In my service we have given nitrous oxid 575 times for major operations. Among these are included many of the hazardous risks in which ether was contraindicated. Comparing the nitrous-oxid cases with ether cases nausea occurred in 17 per cent. as compared with 42 per cent. in ether. This includes all cases. Postoperative nausea is, of course, not wholly due to the anesthetic, i. e., peritonitis and certain visceral operative trauma may cause nausea independently of the anesthetic. Nausea in nitrous-oxid cases in which there is no other nausea-producing factor rarely occurs. In the course of the operation, nausea, in nitrous oxid, as in ether, is usually due to uneven administration. At the conclusion of the operation the patient is fully awake and in unclouded possession of all his faculties in two or three minutes. There is unmistakably a great diminution in surgical shock. Indeed the immunity from shock is as striking in the clinic as in the laboratory. I am well aware that the shock in the routine cases, free from predisposing complications, is rare; but in the cases most urgently demanding surgical relief, such predisposing causes are present, and frequently constitute the principal factor of the immediate risk. It is here that nitrous oxid appears at its best. Then, too, in infections since using nitrous oxid as contrasted with ether we are equally certain that ether as compared with nitrous oxid impairs the immunity of the patient. The difference is so striking that only a great emergency would now induce us to use ether instead of nitrous oxid in grave infections. In a parallel series of acute infections consisting of 75 cases operated under nitrous oxid and 75 under ether, the technic and the after-treatment being constant factors, careful records were kept at the time of the operation and in bedside notes. At the time of operation the average pulse of the ether patients was 114; and the average of all the pulse observations during the first twenty-four hours following operation was 117. While in nitrous oxid the average pulse rate at the time of operation was 115, the average of all the counts during the first twenty-four hours following operation was 105. In ether there was an average increase of eight beats; in nitrous oxid there was a decrease of ten beats. In every other respect also the patient showed a more distinctly favorable course after nitrous oxid than after ether. Not a case showed the rapid march to fatality immediately following the operation which occasionally follows ether. Nitrous oxid as compared with other general anesthetics is technically difficult and expensive. It has certain dangers which are almost wholly in the control of the skilled anesthetist; it is not the anesthetic of choice for the uninitiated, but only for the highly trained anesthetist. Properly supplemented and skillfully given, it may be used as a routine anesthetic in general surgery. Once the operation is over, the patient is strikingly better off than after ether anesthesia. The rôle of shock and intection is far less in nitrous oxid than in ether anesthesia, and accumulating evidence seems to show that there is a distinct diminution in post-operative neurasthenia. In routine operations the combinations of scopolamin and morphin given from one and one-half to two hours prior to nitrous-oxid anesthesia forms so effective a combination that in over 50 per cent. of my patients the day of operation is robbed of all operative memory, and in the remainder it dulled the edge of both the physical and the mental distress.

Gall-Stones and Cancer of the Gall-Bladder

DR. ALBERT VANDER VEER, Albany, N. Y., detailed his observations on this subject. Of 77 cases not previously reported there were 19 males and 58 females, illustrating the fact that females suffer more than males from gall-bladder complications. The diagnosis before operation of the 77 cases was as follows: Gall-stones, 64 cases; cholecystitis, 10 cases, and gall-stones and carcinoma, 3 cases. Operation revealed a variety of conditions. A study of the mortality list showed that stones in the common duct of long standing are very difficult to reach, and that the percentage of deaths is much greater here than in simple cholecystotomy, where there were no such complications. The mortality in the latter cases is very small. One case of the group illustrated most forcibly that marked cholemia is not always fatal after an operation. The experience of surgeons throughout the world during the past ten years indicates that early diagnosis is of the greatest importance to the affected individual. Drs. W. J. Mayo and Charles H. Mayo may be quoted as follows: "In reviewing the mortality of 1,000 operations for gall-stone disease we have been impressed with the very fortunate outcome where gall-stones were in the gall-bladder and therefore were complications. In the 1,000 cases there were 50 deaths, or an average mortality of 5 per cent. The death rate in 820 cases where the disease was confined to the gall-bladder and for benign conditions was 3 per cent. In 416 cases of simple gall-stone disease the mortality was less than 0.5 per cent. The common duct operations amounted to 14.6 per cent. of the whole. In 137 operations for common duct stones the mortality was 11 per cent. In 40 cases, or 4 per cent., malignant disease was discovered, and the operative mortality was 22 per cent. In practically all of these cases gall-stone irritation had been the cause of the development of cancer."

Incisions to Expose and Open the Kidney

DR. HOWARD A. KELLY, Baltimore: In this paper I point out the almost universal abandonment of transperitoneal incisions in approaching the kidney and call attention to the vagueness of view in reference to the lumbar incisions. This vagueness or lack of certainty as to the incision is due to the kidney's situation high up under the ribs and close to the diaphragm. The type of incision must vary with the nature of the kidney affection. In simple conditions, such as movable kidney and hydronephrosis, the kidney can readily be luxated; therefore, there is not the same necessity for getting down immediately on the pedicle as there is in dealing with malignant tumors. An important anatomic landmark, the superior lumbar triangle, has been neglected by anatomists and surgeons. I propose it as a splendid starting point for all kidney incisions to expose a movable kidney, cutting down on the superior lumbar triangle and pulling the muscles apart with blunt force will suffice. This simple incision, which can be the beginning of all incisions, can be lengthened by cutting downward across the lateral muscles of the abdomen, and can be further lengthened by continuing up through these muscles parallel to the costal border to the edge of the rectus muscles. In this way, a flap of the thorax can be turned upward and the upper pole of the kidney and its pedicle directly reached *in situ* without luxation. The cutting of from two to three ribs posteriorly facilitates this.

Acute Suppurative Peritonitis from a Ruptured Pus Tube

DR. J. WESLEY BOVÉE, Washington, D. C.: I have collected 56 cases of this character that, with the exception of my case, had been previously published. I consider the condition of tube perforation occurring so suddenly as not to permit Nature an opportunity to create a barrier to the outpouring of an infectious fluid accumulation as very rare. In this opinion I believe I am supported by the small number of recorded cases and the termination of them. The symptoms are similar

to those of tubal pregnancy, undergoing rupture or abortion. The collapse, however, is usually greater in this condition than in tubal abortion, and later the symptoms of peritonitis afford ample ground for making a correct diagnosis. Of the 56 cases included in my table, 18 patients died without the peritoneal cavity having been opened, and necropsies were relied on for a diagnosis, except in one of Boldt's cases. In the other 38 patients, all operated on by having the peritoneal cavity opened, though perhaps only drainage was added to the procedure, 14, or 37 per cent., died. In one no result was given, and in the 23 remaining successful operations, 20 were done during the first day following rupture. But the mortality rate of the operations done on the first day after rupture, in which the results were reported, was 21 per cent., or 5 in 24. For those done on the second day it was 100 per cent. (3 in 3); for those done on the third day, 67 per cent. (2 in 3), done after the third day, 57 per cent. (4 in 7).

Therapeutic Adaptations of Cecostomy and Appendicostomy

DR. CHARLES A. L. REED, Cincinnati, Ohio: These operations, now being done largely at the instance of medical men as adjuncts to their treatment of certain otherwise intractable cases, are based on the principle that disease within the colon calls for treatment addressed to the colon. The advantages of this method of access embrace (a) exemption of the stomach from medication, (b) escape from impairment of the general health from deranged digestion incident to medication, and (c) relief from the uncertainty of remedies that have been subjected to indefinite and undeterminable chemical reaction in the upper digestive tract. The anatomy of the parts point to cecostomy rather than appendicostomy as the operation of choice. Among the conditions for which ostiomatic operations on the cecum are now being successfully employed are: (1) amebic dysentery, in which it opens the way to treatment more phenomenally successful than has heretofore been realized in the history of this malady; (2) chronic catarrhal or mucous colitis, usually very intractable, but which, as shown by my own cases, are cured by this method more promptly and in larger percentage than by other treatment; (3) chronic constitpation depending on atony and not complicated with enteroptosis is readily brought under control as indicated by my own reports confirmed by those of other surgeons; (4) acute septic peritonitis, in which, after operation, the cecum is opened and utilized to flush the colon—"a hot water bottle on the inside"—followed by saline infusion by the drop method—"coloclysis;" (5) defective flora of the colon is remedied by the installation through the cecal tube of bacilli chiefly of the lactic acid series; (6) antointoxication of intestinal origin is successfully treated by repeated flushings of the colon through the cecum, the cases recorded embracing cures by this method in chronic headaches, iodiopathic epilepsy, rheumatoid arthritis and pernicious anemia. My recorded experience and that of other surgeons force the conclusion that: *First*, the establishment of colonic irrigation through the cecum, whether by cecostomy or appendicostomy, is a procedure attended with the minimum surgical risk; *second*, the application of the operation as an adjunct of medical practice is based on the principle of direct treatment of the colon for conditions that are local to the colon; *third*, the results so far realized justify the continued use of the operation and the more extended application of the principle that it embodies.

Surgical Treatment of Epilepsy

DR. W. P. CARR, Washington, D. C., made a further report of results of 20 operations for idiopathic epilepsy of severe type and long standing:

Six of the 20 patients may be called cured, having passed three or more years without seizures. All except one of these 6 have been well for 4 years or more. One as long as 10 years. With one exception, those not cured were benefited in being free from convulsions for from 2 to 17 months, or in having them in much lighter form and at greater intervals. One was not improved. The operation has not been tried in a systematic way since improved tecnnic has made it possible and safe results warrant a further trial by surgeons of experience in brain surgery. The operation consists in making a large osteoplastic flap and examining the brain carefully for neoplasms, cysts, thickened patches of dura, exostosis or depression of the skull, and any other abnormal conditions. These should be removed when possible. In many cases nothing will be found but a chronic edematous encephalitis. Draining of the superabundant serum in such cases gives always temporary and sometimes permanent relief. The operation is safe; no patients have died, and the more extensive explorations have given the best results. He has declined to operate in mild cases having not more than three or four seizures a month, as the subject is still *sub judice*, and positive results cannot be guaranteed in any given case. But if even one or two bad patients can be cured in a hundred the operation is justifiable and well worth trial. The making of large osteoplastic flaps has done for brain surgery what the Sim's speculum did for gynecology, and free and extensive examinations of the brain are now possible and safe. Consequently, in obscure diseases, exploratory craniotomy is as justifiable as exploratory laparotomy for obscure abdominal lesions. We should no longer allow patients to die from hemorrhage of the brain even when the clots are situated at the base or when they cannot be located before operation.

Surgical Shock

DR. J. G. EARNEST, Atlanta, Ga., gave a description of three cases illustrating some of the phases of surgical shock. In the first very pronounced and profound shock occurred from what would seem to be a trivial cause, uncomplicated with either drug or hemorrhage, and seemed to the author to favor the theory of reflex paralysis rather than reflex spasm. The second case was a prolonged fight for life, in which the patient was kept alive and finally saved by artificial respiration and electricity. The third was apparently one of delayed shock.

Skin Sterilization by Tincture of Iodin

DR. I. S. STONE, Washington, D. C.: There are several good reasons for the use of a better method of skin sterilization, the chief of which are as follows: 1. To save time. The patient is ready for operation immediately after sleep is induced by the anesthetic. No time is spent in washing, etc., which to be effective requires at least ten minutes. 2. The patient may be kept warm and dry during the entire seance, including the time of anesthesia and operation. 3. If the incision must be extended or one made in another place, this quick method is most desirable. 4. The operator's hands may be sterilized with iodin, as the stain can be removed by a weak solution of aqua ammonia.

Gastromesenteric Ileus Following Gastroenterostomy

DR. THOMAS C. WITHERSPOON, Butte, Mont.: I here report a case which teaches, first, the uselessness of gastroenterostomy as a means of drainage for a paralyzed stomach; second, the need of early stomach washing before marked paralysis and dilatation can be detected to relieve tension and possibly to diminish intoxication; third, if after several washings the stomach continues to dilate, the necessity of making free drainage by means of gastrostomy should be considered; fourth, the necessity of keeping the stomach and bowels as free from alimentary material during the first week or ten days after operative procedures on the alimentary canal as the patient's general condition will allow. Nitrogenous foods are the most harmful. Having seen a reasonable number of these cases and believing the majority of gastromesenteric ileus attacks to be due to a similar cause, this case throws light on the entire class. It is reasonably apparent that the attack resulted from a trophic change in the spinal segment which has to do with innervating the stomach. The probability is that injury, operative shock, psychic shock, over-feeding and other causes which upset normal alimentary function or lead to intoxication might bring about this condition. Every case of gastromesenteric ileus which resists stomach washing might well be drained by a gastrostomy, and such a drain might be maintained until the stomach wall regained its tone.

The officers elected were given in THE JOURNAL, Jan. 1, 1910, p. 60.

Medicolegal

Osteopaths Must Secure Regular License to Practice Medicine —Constitutionality of Practice Act—"Medicine" Defined

The Court of Criminal Appeals of Texas affirms, in Ex parte Collins (121 S. W. R. 501), a refusal to release the petitioner on a writ of habeas corpus, after his arrest for practicing medicine without a license as required by the act of 1907 of the Thirtieth Legislature. It says that he demanded his discharge on the ground that the act was unconstitutional, which provided that an osteopath should pay a license, because the evidence showed that he used no medicine or drugs to relieve the patient, and therefore there was no evidence from which the court could conclude that he should be held in custody on a charge of practicing medicine without a license.

Section 13 of the act reads: "Any person shall be regarded as practicing medicine within the meaning of this act (1) who shall publicly profess to be a physician or surgeon and shall treat or offer to treat any disease or disorder, mental or physical, or any physical deformity or injury, by any system or method, or to effect cures thereof; (2) or who shall treat or offer to treat any disease or disorder, mental or physical, or any physical deformity or injury by any system or method or to effect cures thereof and charge therefor, directly or indirectly, money or other compensation." The court holds that the decision appealed from was correct, and that the statute is in all respects constitutional.

Nor does the court agree with the contention that section 31 of article 16 of the Texas Constitution, which says that the legislature may pass laws prescribing the qualifications of practitioners of medicine in that state, and punish persons for malpractice, but no preference shall ever be given by law to any school of medicine, limits the power of the legislature in authorizing the licensing of practitioners to practitioners of medicine; or that as the relator, as he is called, in practicing osteopathy used no medicine, therefore he did not come within the provisions of the act. As the court understands him on this point, he conceded that the statute was broad enough to cover his offense, but that the constitutional provision just cited limited the power of the legislature to the regulation of the practice of medicine, and that osteopathy was not practicing medicine.

However, the constitution, when it demanded the regulation of the practice of medicine, the court says, was not attempting to say that the legislature was limited to any mode or method of healing in order to regulate it; but the word "medicine," used in the constitution, means the art of healing by whatever scientific or supposedly scientific method may be used. It means the art of preventing, curing, or alleviating diseases, and remedying, as far as possible, results of violence and accident. It further means something which is supposed to possess, or some method which is supposed to possess, curative power; but if this definition of medicine is not correct, as stated in the constitution, yet there is no limitation on the power of the legislature in said provision of the constitution which inhibits the legislature under its police power to prevent any one practicing any species or character of remedy to cure any real or supposed ill that the body has or is subject to for pay.

Acts with somewhat similar provisions to the act of the Thirtieth Legislature now under consideration were held constitutional by the Supreme Court of Texas in the case of Dowdell vs. McBride, 92 Tex., 239; also by this court in the case of Logan vs. State, 5 Tex. App., 306. So the court holds that osteopathy is one of the methods of curing the ills to which human flesh is heir, and is one of the methods of curing covered by the act of the Thirtieth Legislature. In other words, in order for one in Texas to practice osteopathy for pay, he must secure a license, as provided for by the act of the Thirtieth Legislature. This the relator did not do. The court accordingly holds that he must be remanded to the custody of the sheriff, where he will be called on to answer the complaint and information relied on in this case.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

January 1

1 *Radium as a Specific in Giant Cell Sarcoma. R. Abbe, New York.
2 Horizontal Oscillation of the Eyeball in Certain Rare Types of Pontine Lesions Resulting in Seventh Nerve Palsy. L. P. Clark and H. H. Tyson, New York.
3 *Unusual Manifestations in Cretinism. L. S. Manson, New York.
4 Diagnosis and Treatment of Peptic Ulcer. C. E. Nammack, New York.
5 Modern Views Concerning Diseased Tonsils. C. M. Harris, Johnstown, Pa.
6 Tuberculin in Ophthalmic Practice. L. C. Peter, Philadelphia.
7 Nephroptosis. M. I. Knapp, New York.

1. Radium in Giant Cell Sarcoma.—Abbe reports 11 cases of extensive inoperable giant cell sarcoma in which the use of radium gave great satisfaction, a cure resulting in each case without a recurrence. A tube of radium of varying strengths was imbedded in the mass for from 10 minutes to 53 hours on one or more days, depending on the size and extent of the growth.

3. Cretinism.—B. H. and O. H., male twins, were both wet-nursed until 16 months of age; began to walk and talk at the proper age and appeared to be perfectly normal in every way except that they were extremely fat. B. H. when 11 years of age, while playing out of doors, suddenly became unable to walk and had to be carried home. He was kept in bed for two weeks. With the inability to walk there was considerable pain about the hips and thighs which troubled him occasionally, becoming, however, less and less frequent in occurrence. Two years later his gait became wabbling, the body swaying from side to side, and is manifested at the present time, ten years later. He began to have spells of unconsciousness with tonic and clonic spasms and frothing at the mouth, which spells became more and more frequent, until in October, 1906, they had become almost a daily occurrence; were both nocturnal and diurnal, some severe and some mild, and of very short duration, indicative of occasional attacks of petit mal besides the seizures of grand mal.

O. H., except for being very fat, showed nothing abnormal until 14 years of age, when he developed a staggering gait. He walked like a drunken man and complained of severe pains about the hips. He was treated by means of an extension apparatus, but without any improvement, the staggering gait remaining the same and a similar unsteadiness developing in the upper extremities so that he was utterly unable to use a typewriting machine and found considerable difficulty in using his hands to write.

Both boys were sent to public school at the age of 7 or 8 years, O. H. remaining until 17, and B. H. until 19; both were slow to acquire knowledge, B. H. being the more backward of the two. In both boys the hair of the scalp became thin and sparse while on the rest of the body the growth of hair was excessive, they being compelled to commence shaving the face at the age of 13, B. H. six months sooner than O. H., in whom the loss of scalp hair took place later and the excessive growth over the rest of the body is not so pronounced. The thyroid in both boys was so very rudimentary as to be scarcely perceptible and difficult to map out.

Manson diagnosed the cases as cretinism with unusual manifestations and began the administration of thyroid extract in gradually increasing doses, with considerable improvement following its use in the case of O. H., less in the case of B. H., although his epileptic seizures were greatly modified. The closest possible investigation furnishes no history of an infectious fever, erysipelas of the neck, or rheumatism (unless the pains in the lower extremities with shortness of the Achilles tendon and limitation of motion at the hip joints be rheumatic in nature) as a possible forerunner of thyroiditis.

Boston Medical and Surgical Journal

December 26

8 Reverdin and other Methods of Skin Grafting: Historical Review. A. Ehrenffried, Boston.
9 Skin Grafting Technic and Cases. F. J. Cotton and A. Ehrenfried, Boston.

10 "Rusty Nail" Tetanus, with Tetanus Bacilli in the Inguinal Glands. C. A. Porter and O. Richardson, Boston.
11 *Gastric Ulcer, Subacute Perforation in a Boy of Eight Years; Operation; Recovery. F. B. Lund, Boston.

December 30

12 The Medical Achievements of Dr. Holmes. E. O. Otis, Boston.
13 *Medical Expert Testimony. W. Schofield, Malden, Mass.
14 Possible Reform of Judicial Procedure. W. G. Thompson, Boston.
15 Improvement of the Present System of Expert Testimony. E. R. Thayer, Boston.
16 *Medical Expert Testimony. G. W. Gay, Boston.

11. **Gastric Ulcer in a Boy.**—The patient was brought up on a bottle, had the diseases of childhood in a mild form, and suffered since about a year old with occasional sick spells accompanied by vomiting. These attacks were rare, however, and he never vomited any blood. About a year ago he was ill for a few days with paroxysmal pain in the epigastrium, accompanied by slight fever. The pain was not related to time of eating. He vomited a few times, and on one occasion the vomiting was blood-streaked. A few months later a similar but more severe attack occurred, during which at one time, he vomited about a teaspoonful of bright blood, and for two days the stools were black. On admission to hospital he was evidently in his third attack. He had been ill two weeks with pain, severe and paroxysmal, referred upward and to the left from the epigastrium, with frequent vomiting. On one occasion he vomited about 2 oz. of bright blood. The pain was particularly severe late in the evening or at night. The stools were sometimes dark, sometimes normal. Some fever had accompanied the attack. His temperature was 101.5 F.; pulse was 108, with slight epigastric tenderness. There was blood in the stools. Under supervision his symptoms rapidly subsided, the tenderness soon disappeared and it was thought that he would recover under medical treatment. He was discharged in two weeks. Six weeks later he was re-admitted, having been attacked two days previously with epigastric distress and vomiting. There were small amounts of bright blood in the vomitus. The attacks of pain occurred in sharp paroxysms. His temperature was 102 F., with marked tenderness in the epigastrium, and distinct muscular spasm. It was felt that in all probability there had been a subacute perforation of the ulcer. At the operation Lund found a large indurated ulcer just to the left of the pylorus on the lesser curvature firmly adherent to the liver. The adhesions which tied it to the liver were not disturbed. A posterior gastro-enterostomy was performed with a short loop. Recovery was uneventful, save for a slight bronchitis.

13. **Medical Expert Testimony.**—Schofield says that if statutes were enacted regulating the fees and contracts of medical expert witnesses, and prohibiting the acceptance by them of any different fees, either for attendance at court or for services, and restoring the common law powers of the trial judge, conditions would be established in the courts by which the evils of medical expert testimony could be greatly mitigated, if not wholly removed. Medical societies can aid the reform by bringing forward the moral issue involved and impressing it on students and practitioners. They can establish rules of conduct to be observed by their members when called on to act as medical expert witnesses. Sir James Stephen said that if medical men laid down for themselves a positive rule that they would not give evidence unless before doing so they met in consultation the medical men to be called on the other side and exchanged their views fully, so that the medical witnesses on the one side might know what was to be said by the medical witnesses on the other, they would be able to give a full and impartial account of the case that would not provoke cross-examination. It would be very natural that parties and counsel should resist as an innovation which would lead to a disclosure of evidence to the opposing party a movement in favor of conference before trial between the experts on each side of the case. But expert witnesses are an exceptional class of witnesses, and the proposition is so manifestly fair and well-intentioned that it ought to have a trial. It would be a step toward the restoration of confidence in the sincerity of medical expert testimony, and would tend to reduce the divergence of medical expert opinions in courts to legitimate and reasonable limits.

16. **Id.**—Gay would give the court authority to charge the jury on medical expert evidence and to appoint medical experts in certain cases on his own motion, said expert to be paid by the county; and to refer all important questions relating to the mental condition of the parties at suit to a commission of alienists or experts before the trial. The bench and the bar, he says, should correct certain abuses attending the hearings of expert evidence in the courts.

New York Medical Journal

January 1

17 *Surgical Management of Complicated Harelip and Cleft Palate. J. B. Roberts, Philadelphia.
18 *Chorioiditis Dependent on Appendicitis. R. T. Morris, New York.
19 Effect of Venereal Disease on Public Health. E. L. Keyes, New York.
20 Is the Demonstration of the Gonococcus as Simple a Matter as is Commonly Supposed? E. Fuller, New York.
21 *Pseudoleucemia gastrointestinalis. H. Shoemaker, Philadelphia.
22 Indiscriminate Enucleation of the Tonsil. P. Fridenberg, New York.
23 The Professional Position of the Roentgenologist. G. H. Stover, Denver.
24 Comparison Between Clinical Infection and Experimental Inoculation in Syphilis. D. W. Montgomery, San Francisco.
25 The Use of the Electrocautery for Uterine Carcinoma. W. J. Gillette, Toledo.
26 *Atypical Exophthalmic Goiter. T. R. Pooley, New York.

17. **Harelip and Cleft Palate.**—According to Roberts, a child born with harelip and cleft palate should be treated by what might be called the composite method. Immediately after birth the mother should press the two halves of the upper jaw together firmly with her fingers two or three dozen times a day. This orthopedic procedure tends to lessen the width of the fissure. As soon after birth as possible, the soft and semicartilaginous bones of the upper jaw should be forced together by means of a Hammond clamp or by the more formal operation of Brophy, with wire tie beams and lead plates. About the same time that this replacement of the bones is attempted, the alveolus should be reconstructed in front, if there be any great deviation in the alignment. Any protrusion of the intermaxillary bone must next be corrected by a plastic or osteoplastic operation at the front part of the septum of the nose. Any gap remaining in the roof of the mouth must next be closed by a flap operation. A fissure in the upper lip must be closed by carefully applied sutures and the deformity of the nostril must be corrected. If the lower lip is conspicuously prominent a V-shaped piece must be excised and perhaps the upper lip widened by insertion of tissue from cheek, chin, or hand. These various operative steps will occupy probably a year or two, because many periods of inactivity will be demanded in order to insure safety to the child and to permit the surgeon to see the effect of the various stages in the operative work.

18. **Chorioiditis Dependent on Appendicitis.**—A clergyman was about to retire from his labors because of chorioiditis. It was anticipated that he was to become entirely blind. His physician stated that he believed the chorioiditis to be secondary to toxemia resulting from the influence of the patient's appendix. This proved to be the correct diagnosis. On examination, Morris found a typical case of fibroid degeneration of the appendix, with the type of irritation which he calls "protective appendicitis," for the reason that it seems to protect the patient against infective appendicitis. The appendix was removed through a short incision, and was found to consist of an organ in which the inner structures had been replaced by connective tissue, as is usually found in such cases. The patient began at once to recover from his intestinal indigestion, from his general nervous irritability, and from the chorioiditis. November, 1909, he considered himself perfectly well and has taken up all of his duties in life again.

21. **Gastrointestinal Pseudoleucemia.**—A composite picture of gastrointestinal pseudoleucemia, according to Shoemaker, presents the following facts: The tonsils are enlarged, and generally also the cervical lymphatics which drain these glands. The disease differs from Hodgkin's disease in the absence of any marked enlargement of the superficial lymph glands over the body. There is a hyperplasia of the lymphoid element in the spleen, the gastrointestinal tract, and the neighboring lymph glands. Herrick, 1908, reports marked enlargement of lymph glands about the pancreas. A splenic tumor, a hyperplasia of the solitary follicles, and Peyer's

patches, are invariable. The solitary follicles are pedunculated, or sessile, and often fuse together forming rugæ. This condition may be so extensive that it prevents the intestine from collapsing. These growths may be pigmented or ulcerated. Microscopically there is seen a round cell hyperplasia of the lymphoid tissue which does not invade the surrounding tissue. The bone marrow is red. In one case only were yellow spots seen. No leucocytosis exists, but a relative increase of the small lymphocytes is present. They may equal or exceed in number the polymorphonuclear cells. There is a reduction in the red blood cells, and a relative reduction of the hemoglobin. Poikilocytes are numerous and no nucleated red blood cells are seen—the author's case excepted.

The principal points of difference in the case reported by Shoemaker lie in the moderate involvement of the lymphoid elements in the gastrointestinal tract, and in the age of the patient. He says that no doubt had this process been a more chronic one, and had the patient lived to the average age (he died at the age of 28) the involvement of the stomach and intestines would at least have been equal to those cases reported by other observers.

26. **Atypical Exophthalmic Goiter.**—In Pooley's case there was absence of any distinct enlargement of the thyroid, a very unusual swelling and protrusion of the conjunctiva, and severe nervous and mental symptoms.

Lancet-Clinic, Cincinnati

December 25

27 Problem of a Federal Department of Health. L. H. Montgomery, Chicago.
28 Routine Induction of Labor at Term. M. A. Tate, Cincinnati.

Journal of the Medical Society of New Jersey, Orange

December

29 *Sterilization of Confirmed Criminals, Idiots, Imbeciles, and other Defectives by Vasectomy. W. J. Chandler, South Orange.
30 *Pathognomonic Signs as Relating to Appendix Localization. A. J. Walscheid, Union.
31 Laboratory Diagnosis of Typhoid and the Typhoid Carrier. D. S. D. Jessup, New York.
32 Typhoid in Infancy and Childhood. LeG. Kerr, Brooklyn.
33 Treatment of Typhoid. W. Coleman, New York.
34 Surgical Aspect of Typhoid. J. Douglas, New York.
35 Prostatectomy. F. M. Donohue, New Brunswick.

29, 30. Abstracted in THE JOURNAL, Aug. 28, 1909, pp. 736, 737.

Journal of the Michigan State Medical Association, Detroit

December

36 *Mind Cures in General and the Emmanuel Movement in Particular. A. Church, Chicago.
37 *The Physician and the Campaign against Tuberculosis. A. S. Warthin, Ann Arbor.
38 *Acute Postoperative Dilatation of the Stomach. A. W. Blain, Detroit.
39 Ephraim McDowell. F. C. Warnshuis, Grand Rapids.
40 Pathologic Examinations in the Diagnosis of Malignancy. Tabulation of 2,400 Reports. C. S. Oakman and T. Walker, Detroit.
41 Saline Container and Dropper. F. J. W. Maguire, Detroit.

36, 37, 38. Abstracted in THE JOURNAL, Oct. 9, 1909, pp. 1220, 1221, 1222.

Annals of Surgery, Philadelphia

December (Jubilee Number)

42 *Intrahuman Bone Grafting and Reimplantation of Bone. Sir W. Macewen, Glasgow, Scotland.
43 Derangements of the Knee. R. Jones, Liverpool, England.
44 *Partial Hypophysectomy for Acromegaly. H. Cushing, Baltimore.
45 *Ligation of the Thyroid Vessels in Certain Cases of Hyperthyroidism. C. H. Mayo, Rochester, Minn.
46 Significance of Thyroidism and its Relation to Goiter. J. Rogers, New York.
47 Treatment of Dry Arthritis with Injection of Petrolatum. T. Rovsing, Copenhagen, Denmark.
48 *Lymphatics of the Colon. J. K. Jamieson and J. F. Dobson, Leeds, England.
49 *High Amputation of the Rectum. H. Hartmann, Paris, France.
50 *Principles of Radical Treatment for Proctosigmoiditis. R. Bastianelli, Rome, Italy.
51 *Operative Treatment of Fractures. W. A. Lane, London, England.
52 *A Clamp for Fixation of Ununited Fractures. R. Morison, Newcastle-on-Tyne, England.
53 *Musculospiral Paralysis Complicating Fracture of the Humerus. C. L. Scudder and W. E. Paul, Boston.
54 *Partial Nephrectomy. G. Barling, Birmingham, England.
55 *Partial Resection of the Bladder for Malignant Tumor by the Transperitoneal Route. A. Primrose, Toronto, Canada.
56 *Cancer of the Prostate. H. H. Young, Baltimore.
57 *Acute Hemorrhagic Pancreatitis. J. R. Judd, Honolulu, Hawaii.
58 Pancreato-Enterostomy and Pancreatectomy. R. C. Coffey, Portland, Ore.
59 *A Disease of the Gall-Bladder Requiring Cholecystectomy. R. G. A. Moynihan, Leeds, England.
60 Transduodenal Choledochotomy. N. J. Maclean, Winnipeg, Canada.
61 Ileus Due to Meckel's Diverticulum. D. N. Eisendrath, Chicago.
62 Diffuse Peritonitis. J. B. Deaver, Philadelphia.
63 Appendicostomy in Conditions of Acute Peritonitis. E. W. H. Groves, Bristol, England.
64 The Appendix Vermiformis. C. B. Keetley, London, England.

42. **Intrahuman Bone Grafting.**—A case is reported by Macewen in which the greater part of the shaft of the humerus was restored by intrahuman transplantation 30 years ago. Three other cases are mentioned—one illustrating human reimplantation of the flat bones of the skull and two of restoration by transplantation of human jaw bones. In both of these latter the operation was performed for the removal of marked deformity as well as to restore the function of the mandible. A fourth case is referred to as a note.

These cases are quoted as examples of many others in which bone grafting and transplantation of bone has been successfully performed by Macewen. It is to be noted that the periosteum plays no part in the bone reproduction after transplantation, and in the majority of the cases referred to the periosteum was not transplanted along with the bone. The patient in point, aged 3 years, was (July 17, 1878) in an emaciated and exhausted condition from suppuration due to necrosis of the right humerus, evidently from osteomyelitis. The shaft of the humerus was found to be totally necrosed and already separated from its head near its epiphyseal junction. At the condylar epiphysis crepitation was likewise elicited. The bone was dark colored and fetid. About nine weeks after the onset of the disease, the exposed loose bone was divided near its center into two parts which were consecutively withdrawn. The two portions removed comprised the whole humeral diaphysis. The periosteal tube which remained was covered with a thick layer of granulation tissue which was soft throughout, except at the proximal extremity, where the finger detected rough, osseous plaques of bone. This tunnel was stuffed with carbolized lint and the arm was fixed on a splint. The tunnel left by the withdrawal of the bone gradually coalesced from the epiphyses toward the superficial openings without the formation of new bone, except for a short distance from the head of the humerus, where about an inch and a half of shaft had formed three months after removal of the dead shaft. Fifteen months subsequently, two wedges of bone were removed from the tibia of a patient 6 years old, affected with anterior curves. The bases of these osseous wedges consisted of the anterior portion of the tibia, along with its periosteum, the wedges gradually tapering toward the posterior portion of the tibiæ. After removal, they were cut into minute fragments with the chisel, irrespective of the periosteum. The bulk of the fragments had no periosteum adhering to them, they having been taken from the interior of the bone. They were then deposited into the muscular sulcus in the boy's arm and the tissues drawn over them and carefully adjusted. Two other wedges of bone of larger size than the first were similarly dealt with and inserted two months subsequently to the first graft, and a third couple were placed in a position five months after the first. These filled the gap in the arm to the extent of four and a quarter inches; the humerus then measured 6 inches in length. Soon the utility of the arm was greatly restored. Seven years after the dismissal from the hospital the humeral shaft was found to have increased in length by one and three-quarters inches, being now seven and three-quarters inches, and it had increased in circumference to a marked extent and had assumed a somewhat irregular shape. The length of the sound arm had, however, considerably outstripped the length of the transplanted humerus. The patient could use his grafted arm for a great many purposes—taking food, adjusting his clothes, and in many games.

44. **Hypophysectomy for Acromegaly.**—The patient, male, aged 38 years, about 8 years ago, began to suffer from periodic headaches, which have increased in frequency and

severity so that now the pain has become more or less constant, with exacerbations. It is referred to the depth of the head, and often passes to the back of the neck, where there is considerable stiffness and an uncomfortable drawing sensation. Soon after the onset of the headaches the man began to be troubled with photophobia, particularly during the attacks of pain. Otherwise there has been no visual disturbance, no impairment in hearing, no olfactory or gustatory disturbance, no vomiting, no nausea. Gradually there developed all the signs and symptoms of acromegaly. The operation done March 25, 1909, consisted of a preliminary tracheotomy; partial removal of the hypophysis, using the transphenoidal route and osteoplastic resection of the anterior wall of the frontal sinuses. The tracheal wound was closed without drain. Ether anesthesia was used.

Though anxious to return home and quite able to leave the hospital within a week or ten days after the operation, he was persuaded to remain for 17 days. During this interval, he called attention to the fact that his hands seemed much less stiff than formerly; indeed, that he had not seen wrinkling of the skin such as was present for a number of years. Measurements of the fingers showed that they had diminished from 1 to 1.5 mm. in their circumferential measurements. His photophobia had almost entirely disappeared. The one objectional feature was the inevitable complete loss of his olfactory sense. There had been no headache since the operation, very slight photophobia and only an occasional slight puffiness of the hands—much less than formerly. The speech still remained somewhat thick, and the patient had no subjective consciousness of any diminution in the size of the tongue comparable to that which had occurred in the soft parts of the hands. There had been no nasal discharge. He was troubled only by the loss of the sense of smell, which had cut him off from the enjoyment of certain flavors. He had given up smoking, and now chews tobacco, and no longer cares for coffee. He has gained 10 pounds in weight.

45. **Vessel Ligation for Hyperthyroidism.**—Five hundred and eighty patients suffering from hyperthyroidism or exophthalmic goiter have been operated on at St. Mary's hospital. Of these operations, 225 were ligations of the superior thyroid arteries and veins. A number of these ligations have been made too recently to base observations on except as to the immediate risk of operation, which is about 2 per cent. in deaths occurring within a few days. Ten of these patients were operated on too late and did not improve but continued in their downward progress, dying in from eight to ten months later of their disease. In these deaths is included a case of pernicious anemia. The Mayos now have full records of 138 cases which were ligated sufficiently long ago to make the report of value.

There were 12 cases of ligation of the remaining superior thyroid artery and vein following thyroidectomy of the larger lobe and isthmus, the primary operation being followed by relapse after one or several years with growth of the remaining lobe. Twenty-eight cases of thyroidectomy followed the ligation of both superior thyroid vessels. Although all of them were very severe cases at the time of ligation, there was no mortality from the second operation.

In cases of ligation without thyroidectomy the results were as follows: Slight improvement, 9; great improvement, 44; very marked improvement, 11; absolutely well, 4; cases of questionable exophthalmic goiter, no improvement, 9.

48. **Lymphatics of the Colon.**—Jamieson and Dobson review the previous publications on this subject and again emphasize the necessity of complete removal of lymphatic areas when operating for carcinoma of the colon.

49. **High Amputation of Rectum.**—Although the results of abdominal and perineal amputations of the terminal parts of the intestine have not been very encouraging, Hartmann believes that with the actual improvement of the technic they will become better, and that the abdominoperineal path is to be the path of the future. Hartmann has done this abdominoperineal operation four times—three times bringing down the pelvic colon through the perineum and once the upper end in an iliac incision and total extirpation of the lower end, with three cures and one death by hemorrhage, the results of an operative fault.

50. **Proctosigmoiditis.**—In cases of stricturing proctitis or proctosigmoiditis the treatment recommended by Bastianelli is as follows: 1. Cecal anus and laparotomic exploration of the bowels. 2. Perineal or combined removal of the diseased section, in one or two stages, with mobilization of sigmoid and colon, if necessary, and preservation of sphincter. 3. Closure of cecal anus. 4. Plastic operation, if necessary. Bastianelli emphasizes the importance of resorting more frequently to the abdominal route in the treatment of strictures of the rectum for the purpose of preliminary exploration, and the importance of exact ligating and cutting the arterial supply from the abdomen, even in cases of perineal operation to prevent any damage to the circulation.

51. Published in the *Lancet*, June 12, 1909.

52. **Fixation of Ununited Fractures.**—The clamp described by Morison is intended to hold together fractured bones till union has occurred, when the clamp is removed.

53. **Musculospiral Paralysis.**—Scudder and Paul report 11 cases in which the end-results are known. In 8 cases there is no wrist drop at present; 3 cases showed no improvement in the nerve function following operative interference. Of these 3 cases, 1 patient died 3 years following suture of the nerve, showing no improvement in the nerve function; another has had 3 unsuccessful operations for ununited fracture of the humerus at intervals of from 6 to 8 years; the third patient at the first operation had the nerve freed, resected and sutured, and at the second operation the bone shortened by resection, the nerve, found bulbous, resected and sutured. After 16 years there is no return of function in the nerve. Eight of these patients were badly injured. The trauma was very severe; the arm was caught in the shafting or the belt of an engine, or had received a gunshot wound, or was crushed by machinery. Nearly all the patients were operated on 3 or 4 months following the accident. The longest interval between accident and operation was 3 years. This patient recovered functional usefulness and the musculospiral supply. Improvement in these patients was first noted 6 months to one year following the operation.

54. **Partial Nephrectomy.**—In the case reported by Barling, the left kidney was found to have two ureters. Owing to symptoms present it was necessary to do a kidney operation. The upper portion of the left kidney, exactly two-thirds of it, was unusually firm in consistence but otherwise apparently quite healthy; the lower third was in a condition of complete sacculation and presented a yellowish-white color in contrast to the brownish red of the upper healthy portion. The pelvis of this lower third was much dilated, as was the ureter also. No stone could be detected in the pelvis or ureter. The latter was therefore opened and a bougie passed easily into the bladder, showing the absence of stone or stricture. After considerable search, the second ureter was found clinging closely by dense adhesions to the diseased ureter and dilated pelvis. Much trouble was required to separate the two. The dilated ureter was then clamped and divided. A clamp was next placed on the vessels of the kidney and the lower third of the kidney excised. Lest any renal tissue should be left on the truncated lower end of the upper healthy portion, that end was carefully curetted with a Volkmann spoon, and the end was whipped over with a continuous catgut suture. The clamp was then removed from the vessels; very little bleeding occurred. The remaining portion of kidney was returned into the loin and the wound closed, except for a drainage opening. Shock after the operation was extremely marked, much more so than in an ordinary case of nephrectomy for pyonephrosis. The patient's recovery was interrupted by a slight febrile disturbance on the ninth day, two days after the drainage tube was taken out, and was probably due to some little leakage from the cutting out of continuous catgut suture. There was at this time a little hematuria. The patient is now quite well in all respects.

55. **Transperitoneal Resection of Bladder.**—Primrose reports a case of tumor of the bladder in which he employed successfully the method first advocated by C. H. Mayo—transvesical

resection of a portion of the bladder wall. The left ureter in this case passed through the tumor mass. It was severed one inch from the bladder wall and sutured into the wound. Its patency was preserved. The patient made an excellent recovery.

56. **Cancer of the Prostate.**—Young's paper consists of a comprehensive and detailed clinical, pathologic, and post-operative analysis of 111 cases in which he operated. He says that a cure can be expected only by the routine removal of the seminal vesicles, vasa deferentia and anterior two-thirds of the vesical trigone with the entire prostate. The operation is not extremely difficult or dangerous, and already at least one cure has probably been obtained (now almost five years since operation). He says that when the disease is advanced and urination very difficult and frequent a catheter life should be adopted. When, however, catheterization is difficult or painful, a palliative operation should be done, in some cases suprapubic cystostomy, but lasting relief of urinary obstruction and vesical pain can be secured by careful conservative perineal prostatectomy.

57. **Acute Hemorrhagic Pancreatitis.**—Judd reports the case of one patient subjected to operation and who recovered. An opening was made into the head of the pancreas with a blunt instrument and a cigarette drain inserted leading out above the stomach through the gastro-hepatic omentum. The gall-bladder and ducts showed no stones and were apparently in normal condition. The wound was then closed, except for the space occupied by the drain, and another drain inserted through the suprapubic stab wound. The patient was put to bed with the head of the bed raised and was given normal saline solution by rectum. Steady improvement followed the operation. There was considerable drainage of a thin, bloody fluid for the first 24 hours, which rapidly diminished, and by the third day drainage had practically ceased. The temperature reached 101.4 F. on the second day, and was elevated 1 or 2 degrees for 12 days, after which time it remained normal. The pain continued, although of less intensity, for 3 days and required several hypodermics of morphin. The bowels moved voluntarily on the fourth day, followed by a profuse diarrhea for several days. Convalescence was then uneventful and the patient returned home during the fourth week. Since the operation, nine months ago, she has enjoyed good health, and at present is in splendid condition.

59. **Cholecystectomy.**—Moynihan points out that there is a condition of the gall-bladder in which fine grains of calculous material are embedded in the mucosa; the cystic duct is not affected. The wall of the gall-bladder may appear normal. It may retain the blue color of health and the walls are thin and supple. It may be white and thickened, slightly or grossly, in part or in whole. No stones are free in the gall-bladder though particles of grit may be found in the bile therein. Chronic pancreatitis may be present in the more advanced cases. Inspection of the mucosa of the gall-bladder is necessary to reveal the presence of this condition in its early stages; it cannot otherwise be recognized. Removal of the gall-bladder is necessary; drainage of the common duct may be desirable in cases where jaundice has been present. Three illustrative cases are cited.

West Virginia Medical Journal, Wheeling

December

65 *The New Neurology. C. A. Wingerter, Wheeling.
66 Artificial Hyperemia as a Therapeutic Measure. J. H. Anderson, Marytown.
67 Atrophic Rhinitis. G. A. Aschman, Wheeling.
68 Diagnosis and Treatment of Perforation in Typhoid. C. M. Scott, Bluefield.
69 Plastic Operation for Relief of Anteflexion of the Uterus. H. G. Nicholson, Charleston.

65. Abstracted in THE JOURNAL, Nov. 6, 1909, p. 1587.

Journal of Advanced Therapeutics, New York

December

70 Radium Therapy in Inoperable Tumors. W. H. Dieffenbach, New York.
71 Standardization of High Potential Electric Currents (continued). E. C. Titus, New York.
72 *Treatment of Pathologic Menopause. H. F. Pitcher, Haverhill, Mass.

72. Abstracted in THE JOURNAL, Dec. 11, 1909, p. 1999.

Woman's Medical Journal, Cincinnati

December

73 *Habits of Posture a Cause of Deformity and Displacement of the Uterus. E. M. Mosher, Brooklyn.
74 Morphology and Physiology of Areas of Langerhans in Some Vertebrates (continued). L. M. Dewitt, Ann Arbor.

73. **Posture and Displacement of the Uterus.**—Mosher examined *per vaginam* and by rectum a large number of women and girls who have acquired a lateral obliquity of the pelvis from habits of posture, and in almost no instances has she found the uterus in the axis of the pelvis. Twenty-two had a right lateral obliquity (right hip elevated), while the remainder had acquired the opposite tilt. In every one of these cases the uterus approached the elevated hip, especially in the upright position of the trunk. Most of these women had dysmenorrhea and leucorrhea and in some the condition was accompanied by more serious pelvic lesions. Mosher says that a combination of the two forms of obliquity in the habitual posture of the pelvis is common, especially when the habit has been acquired in standing, and the influence of both can be traced in the shape and position of the uterus.

The author urges that mothers in every school district should collectively be instructed in reference to the normal position of the body in standing and sitting, and of the dangers which menace their daughters if not properly trained. Teachers everywhere should be similarly instructed and urged to enforce the adoption of right habits of posture in their pupils. Physical exercise not only in the gymnasium but in the school-room, between classes, should be given to strengthen the muscles which hold the pelvis in normal obliquity and which correct the tendency to lateral obliquity. Physicians and all intelligent people should exert an influence against the use of articles of wearing apparel by girls and women which engender bad habits of posture, the most important of these being high heels, tight corsets, and those which crowd the abdomen back and downward, stocking supporters fastened to the front of the corset, and tight waist-bands.

Western Medical Review, Omaha

December

75 The Medicolegal Aspects of the Roentgen Rays from the Standpoint of the Surgeon. R. D. Mason, Omaha.
76 Nystagmus. L. B. Bushman, Omaha.
77 Typhoid Fever. J. A. Andrews, Holdredge, Neb.
78 The Typhoid Problem. R. B. McGrath, Grand Island, Neb.
79 Meckel's Diverticulum as a Cause of Intestinal Obstruction. S. R. Hopkins, Omaha.

Journal of Nervous and Mental Diseases, Lancaster, Pa.

December

80 *Distribution of Encephalic Hemorrhages. S. D. W. Ludlum, Philadelphia.
81 *Unusual Type of Syringomyelia. W. M. Leszynsky, New York.
82 *Gunshot Wound of the Brain, without Focal Symptoms. W. M. Leszynsky, New York.
83 *Diet in Epilepsy. A. J. Rosanoff, Kings Park, N. Y.
84 Cause of Contractures and Spasticity in Cases Showing no Demonstrable Lesion of the Pyramidal Tracts. J. H. W. Ilheln, Philadelphia.

80. **Distribution of Encephalic Hemorrhages.**—In the ninety-three patients examined by Ludlum, it would seem that vascular lesions occur about as frequently in the anterior chorioid, the posterior communicating, and the posterior cerebral arteries, as in the striate group of vessels. They all are, he says, important factors both in softenings, cyst formations and hemorrhages in the region of the basal ganglia.

81. **Syringomyelia.**—The unilaterality of the symptoms, their almost exclusive sensory character, their accurate correspondence with accepted views of the segmental sensory distribution, the characteristic dissociation of sensibility, and the entire absence of motor symptoms leads Leszynsky to present his patient as an atypical case of syringomyelia in its early stage, or a gliosis limited to the sensory tracts in the central portion of the cord. A tumor of the cord could be excluded.

82. **Gunshot Wound of Brain.**—The interesting feature in this case is that the bullet took its course almost directly through the median line, traversing the anteroposterior diameter of the brain, and therefore doing no damage to any area

productive of focal symptoms. The bullet in this case was located in the median line of the occipital region by means of radiographs. The present location of the bullet and the absence of signs of irritation contraindicate surgical measures for its removal.

83. **Diet in Epilepsy.**—Rosanoff obtained a reduction in the number of seizures by about 14 per cent., apparently attributable to a simple diminution of the daily allowance of the proteids and to nothing else. This diet consisted of three meals a day at the usual hours, each meal consisting of 125 gm. of bread, 16 gm. of butter, and 250 c.c. of milk, carefully weighed and measured. By calculation this diet contains approximately 52.2 gms. of proteids, 70.3 gms. of fats, and 220.0 gms. of carbohydrates daily.

Journal Tennessee State Medical Association, Nashville

December

85 *Primary Malignant Tumors of the Osseous System. W. H. Bryan, Nashville.
86 Neurasthenia. J. W. Stevens, Nashville.
87 Spread of Tuberculosis. S. M. Miller, Knoxville.
88 Management of Transverse Presentations in Labor. J. B. Murfree, Murfreesboro.
89 Mortality and Morbidity of Appendicitis. C. N. Cowden, Nashville.

85. Abstracted in THE JOURNAL, May 1, 1909, p. 1450.

Military Surgeon, Washington, D. C.

December

90 Medical Service in Campaign. P. F. Straub, U. S. Army.
91 Medical Service with Philippine Scouts. E. E. Persons, U. S. Army.
92 *Medical Equipment and Supplies for the Organized Militia. C. R. Darnall, U. S. Army.
93 Medical Progress in Porto Rico. B. K. Ashford, San Juan, Porto Rico.
94 Form of Obtaining Sanitary Camps. W. R. Davidson, U. S. Army.
95 *Is there a Venereal Peril for Us? J. Van R. Hoff, U. S. Army.
96 *Eradication of Specific Urethritis from the Army by Means of the "K" Package, Reenforced by Military Law and Discipline. H. I. Raymond, U. S. Army.
97 Venereal Prophylaxis in the Military Service. R. B. Grubbs, U. S. Army.
98 Venereal Disease in the Army and the Necessity of Proper Action by State and Municipal Authorities for its Effectual Control. P. C. Fauntleroy, U. S. Army.

92. Abstracted in THE JOURNAL, Nov. 13, 1909, p. 1683.

95. Published in the *Medical Record*, Nov. 27, 1909.

96. Abstracted in THE JOURNAL, Nov. 20, 1909, p. 1768.

New Orleans Medical and Surgical Journal

December

99 Ophthalmic Surgery. H. D. Bruns, New Orleans.
100 Two Cases of Pellagra. E. M. Hummell, New Orleans.
101 Retropharyngeal Abscess. H. Dupuy, New Orleans.
102 Vincent's Angina, with Demonstration of the Organism. A. L. Well, New Orleans.
103 Extrauterine Pregnancy. P. T. Talbot, New Orleans.
104 Regional Anesthesia. C. W. Allen, New Orleans.
105 Coxa Vara and its Treatment. P. A. McIlhenny, New Orleans.
106 Treatment of Fracture of the Patella, especially old Fracture. F. W. Parham, New Orleans.

The Proctologist, St. Louis

December

108 The Lymphatics in Proctologic Diseases. R. H. Barnes, St. Louis.
109 Stricture of Rectum and Sigmoid. J. D. Potts, St. Louis.
110 *New Method for Attempting to Secure Sphincteric Control after Colostomy. C. Ryall, London, England.

110. Published in the *Lancet*, July 3, 1909.

Illinois Medical Journal, Springfield

December

111 *The Responsibility of the State in the Care of its Dependents. F. Billings, Chicago.
112 Problem of the Blind from the Physician's Standpoint. J. T. McAnally, Carbondale.
113 Diagnosis of Fractures. W. Fuller, Chicago.
114 Pemphigus Requiring Surgical Attention. S. C. Glidden, Danville.
115 Hodgkin's Disease with Primary Tumor in Gall-Bladder. E. H. Weld and P. L. Markley, Rockford.
116 Skin Grafting. G. H. Galbraith, Clifford.
117 *Prepared Foods and Diabetic Articles. R. T. Woodyatt, Chicago.
118 Ulcer of the Stomach, its Differentiation from Cancer, and Treatment of these Conditions. F. M. Mason, Rossville.
119 *Vaccine Treatment of Iritis. D. A. Vanderhoof, Rockford.
120 The Eye in Relation to General Diseases. W. E. Gamble, Chicago.
121 *Eye Diseases Associated with Nasal and Nasopharyngeal Disorders. T. Faith, Chicago.
122 *The Nature and Causes of Nasal Mucous Polypi. E. F. Garraghan, Chicago.
123 The Tonsil Question. R. H. Brown, Chicago.
124 Studies in Workmen's Compensation for Industrial Injuries (continued). W. H. Allport, Chicago.

111, 117. Abstracted in THE JOURNAL, June 5, 1909, p. 1880.

119. **Vaccine Treatment of Iritis.**—Vanderhoof reports two cases as examples of the good results which are frequently derived when using vaccine treatment. The results have been especially good in acute streptococcus and staphylococcus infections of the ear, nose and throat. Results have been negative in chronic suppurative conditions of the sinuses.

121. **Associated Eye Diseases.**—Faith claims that nasal and nasopharyngeal disease may be responsible for headaches of an ocular type, supraorbital neuralgia, localized pains in the eyes, asthenopic symptoms, vascular disturbances, congestion of conjunctiva, edema of lids, exophthalmos, orbital cellulitis and abscess, optic neuritis, usually retrobulbar, ocular palsies, and phorias, keratitis, phlyctenulæ of either the conjunctiva or cornea, and diseases of the lachrymal apparatus.

122. **Nasal Mucous Polypi.**—That nasal polypi are not necessarily dependent on suppuration in the accessory cavities of the nose, although they are sometimes found associated with such suppuration, is Garraghan's belief. Suppuration in the nasal sinuses may result from the presence of mucous polypi in the nose. Nasal polypi should be considered as a symptom of a disease which in most cases demands more than the simple removal of the polypi to effect a permanent cure. In the majority of instances, after the removal of the polypi, which is best performed by means of the cold wire snare and punch forceps, the thorough removal of all diseased or carious bone which may be found on any of the nasal sinuses is absolutely essential to the prevention of the recurrence of nasal polypi.

American Journal of Physiology, Boston

December

125 *Physiology of Lymph—The Leucocytes in the Neck Lymph, Thoracic Lymph, and Blood of Normal Dogs. B. F. Davis and A. J. Carlson, Chicago.
126 Relative Toxicity of Various Salts and Acids Toward Paramecium. L. L. Woodruff and H. H. Bunzel, Woods Hole, Mass.
127 The Nucleoalbumen in the Yolk Platelets of the Frog's Egg; Note on the Black Pigment. J. F. McClendon, New York.
128 Catalase of Echinoderm Eggs before and after Fertilization. E. P. Lyon, St. Louis.
129 Elimination of Total Nitrogen, Urea, and Ammonia Following the Administration of some Aminoacids, Glycylglycin and Glycylglycin Anhydrid. P. A. Levene and G. M. Meyer, New York.
130 *Influence of the Removal of Segments of the Gastrointestinal Tract on the Character of Protein Metabolism. I. Levin, D. D. Manson and P. A. Levene, New York.

125. **Physiology of Lymph.**—Davis and Carlson find that the blood of normal dogs contains about 20,000 leucocytes per cubic millimeter, of which about 77 per cent. are polymorphonuclears. On the other hand, the thoracic lymph varies greatly from 1,000 to 30,000 per cubic millimeter, of which about 95 to 100 per cent. are small lymphocytes. Large lymphocytes and eosinophiles are found but the polymorphonuclears are present only with admixture of blood. The neck lymph is similar to the thoracic. The experimental evidence indicates that the lymphocytes do not pass directly from their place of formation through the capillary walls into the blood but are taken up by the lymph stream and enter the blood with the thoracic and neck lymph.

130. **Removal of Segments of the Gastrointestinal Tract.**—Levin, Manson and Levene remark that previous studies of the digestive functions have not taken account of the influence of the various segments of the gastrointestinal tract on metabolism and elimination. The method of study has usually been the removal of portions of the intestinal contents through fistulas. The authors propose on the other hand to study the effect of removing various parts of the digestive organs themselves. The present communication forms the first installment of a series of investigations on this principle. Preliminary to the removal of the entire stomach, they studied the effect on metabolism of gastroenterostomy by which the function of the stomach is practically nullified. Their experiments were performed on dogs and had reference principally to the protein metabolism. They found that the nitrogen of proteins was rapidly excreted, so that with a considerable increase in the protein ration there was no nitrogen

retention after twenty-four hours. The experiments also showed that the principal amount of nitrogen was eliminated very shortly after its ingestion. The experiments seem to show that the chemical digestion of proteins by the stomach is quite subsidiary and that its principal office is to retain the nitrogenous food in such a way that opportunity may be given for the organism to store up and retain the ingested protein. The authors suggest that this is accomplished to a certain extent by the absorption from the stomach of incompletely digested proteins.

Denver Medical Times and Utah Medical Journal

December

131 Hereditary Ocular Diseases. G. F. Libby, Denver.
132 Physicians and the Public Health. W. H. Sharpley, Denver.
133 Pityriasis Rubra Pilaris. A. J. Markley, Denver.
134 The Treatment of Wounds. C. E. Tennant, Denver.
135 Intrapartum Hemorrhage Due to Premature Separation of the Placenta. A. M. Ditson, Denver.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

December 18

1 *The Brain Structures Concerned in Vision. F. R. Cross.
2 Special Sense Discharges from Organic Disease. Sir W. R. Gowers.
3 *Latent Chorea: Contribution to the Study of Sydenham's Chorea. R. Miller.
4 *X-Ray Ulcers Cured by Hilton's Method. A. F. Savill.
5 Action of Cryogenine on Phthisical Temperature. J. E. Gordon.
6 Case of Peripheral Neuritis (Alcoholic). J. Wyllie.
7 *Case of Pneumonia Migrans. H. B. Roderick.
8 Syphilis of Pancreas with a Pancreatic Calculus in the Duct. J. G. Taylor.
9 Status Lymphaticus with Sudden Death. R. W. S. Walker.

1. **The Brain Structures Concerned in Vision.**—Cross claims that the visuosensory area along the calcarine fissure is the primary station in each hemisphere for the reception of impressions coming from the retina through the geniculate bodies; around it is the visuopsychic area to which these impressions are transferred; it occupies the rest of the surface of the occipital lobe, its functions being to elaborate and to interpret. If part of the visuopsychic area is primarily diseased, there is likely to be a partial hemianopsia complicated by slight peculiarities of vision more or less indefinite, some difficulty in memory of words, some form of letter, word, or mind blindness. When the fibers that go to the temporal region are affected, there may be word deafness or loss of power in the musical faculty, to recall names or to read aloud. The psychic cells are associated with the psychomotor, where the impressions or information gained by sight are transferred for purpose of thought, speech, or action, and these with the emissive motor by which speech and writing are affected. The centers for these latter acts lie adjoining those for the simple movement of the lips and hand. The various parts of the visual cortex are connected by short association fibers almost infinite in their distributions.

3. **Latent Chorea.**—Miller holds that (rheumatic) chorea declares itself first by symptoms significant of general nervous instability. He urges that in dealing with children suffering from nervous disorders of many kinds special care should be taken to exclude the possibility of their having originated from a slight rheumatic infection. The well-known association between rheumatism and nervous instability is not to be explained by considering that the infection is specially prone to attack neurotic children, but by regarding the nervousness as in most cases the outcome of an infection already present (latent chorea). The mental depression and headache in rheumatic children are usually to be attributed to the disease and not to its treatment by salicylates. The recognition of latent chorea in children suffering from obvious acute rheumatism affords strong evidence that chorea is a rheumatic condition.

7. **Pneumonia Migrans.**—The striking features of Roderick's case were: (1) The cerebral symptoms, which persisted throughout the illness, varying from a semi-comatose state to a violent delirium; (2) the migratory nature of the pneumonia and the small area of lung involved in each attack; (3) the slight disturbance of respiration, which only once reached 40 to the minute, being usually about 28; and (4) the rapid recovery after a small dose of antipneumococcic vaccine (0.5 c.c. containing 2,500,000 dead pneumococci) which, he thinks, it is reasonable to suppose, was instrumental in bringing about the favorable result.

British Medical Journal, London

December 18

10 *Brain Structures Concerned in Vision and the Visual Field. F. R. Cross.
11 Preparations of Lactic Acid Bacilli and the Production of Soured Milk. E. Quant.
12 *Leucoplakic Vulvitis and its Relation to Kraurosis Vulvæ and Carcinoma Vulvæ. C. Berkeley and V. Bonney.
13 *A New Color-Perception Spectrometer. F. W. Edridge-Green.
14 *Treatment of Post-Operative Shock by Pituitary Extract. G. G. Wray.
15 Inversion of Appendix and Cecum. W. J. Greer.
16 Acute Mastoid Suppuration and Suppuration in the Neck. J. Scott.
17 *Is Radium a Cure for Cancer? L. Wickham.

10. See Abstract No. 1.

12. **Leucoplakic Vulvitis.**—The authors have tried a number of remedies for the pruritus in leucoplakic vulvitis, and have found that most of them have failed to give relief. In view of their pathologic findings they advise that the affected area be excised in all cases in which local treatment fails, and since a permanent change of character takes place in all the epithelial cells over the affected area, the excision should be a wide one lest the disease recur again in the scar, which has happened to them in two cases.

13. **New Color-Perception Spectrometer.**—The instrument described by Edridge-Green is a spectrometer so arranged as to make it possible to expose to view in the eyepiece the portion of a spectrum between any two desired wave-lengths. It consists of the usual parts of a prism spectroscope—that is, a collimator with adjustable slit, prism, and telescope with eyepiece.

14. **Post-Operative Shock Prevented by Pituitary Extract.**—In three cases Wray injected 1 c.c. of a 20 per cent. solution of the posterior lobe of the pituitary body intramuscularly into the patient's arm before the patient had fully recovered from the anesthetic. The effect was almost immediate, and the almost imperceptible pulse soon became large and bounding. This effect lasted from 12 to 16 hours, and gradually passed off. Not only did the pulse become larger in expansion, but it was also slowed, and whereas it had been irregular it become regular. This effect seems due not only to the action of the drug on the blood vessels, but also on the heart. The injection was given in conjunction with normal saline by rectum.

17. **Radium a Cure for Cancer.**—From a study of 600 cases of tumors comprising specimens of each variety, before, during, and after the treatment, Wickham concludes that the malignant evolution of these tumors may not only be arrested for months by radium treatment, but that occasionally, these tumors have entirely disappeared, giving the impression of real cure, the rays having on cancer cells a somewhat selective action. He says that radium cannot at present have other pretensions than to act on lesions which are localized and sufficiently accessible, or rendered accessible. In cases with generalization the resources of radium are limited to the reduction in size of the principal tumors, to the arrest of hemorrhage and secretion, and to the diminution of pain. If the cancer is localized and accessible, but inoperable, radium, with some rare but very remarkable exceptions, can only diminish or stop the hemorrhages and secretions, and occasionally render the tumor operable; but, in spite of these great advantages, which result in a prolongation of life, the patient in the end dies of the cancer. The influence of radium diminishes as the tumor becomes less and less accessible. Certain tissues are infinitely less favorably acted on by radium than others, for example, the mucous membranes, especially of the buccal cavity (tongue, tonsils, pharynx, etc.), and in these cases must be added the material difficulty of reaching the region conveniently, and applying the heavy screen-filters and leaving them in position for a sufficient length of time.

Lastly, if the cancer is very extensive, a radium-therapeutist has great difficulty in obtaining the stock of radium necessary to act sufficiently in every direction, for the number of doses needed in a number of cases is very high.

Medical Press and Circular, London

December 1

18 Appendicitis when the Appendix is a Pelvic Organ. J. Bland-Sutton.
19 An Apparatus for the Administration of Ether by the Purely Open Method. R. H. Hodgson.
20 Tubercle of the Lachrymal Sac. S. Stephenson.
21 Hypertrophic Cirrhosis and Alcoholic Paralysis. H. C. Drury and A. C. O'Sullivan.

December 8

22 Symptoms of Intestinal Stenosis. A. Mathieu.
23 The Opsonic Method. H. W. G. MacLeod.
24 Adhesions of the Diaphragm. L. Bassenge.
25 The Peritoneum and Peritonitis. E. R. Carling.

Clinical Journal, London

December 1

26 Mental Hygiene. S. Warner.
27 Diagnosis of Acute Abdominal Disease. H. B. Shaw.
28 Meningitis Secondary to Sphenoidal Sinus Disease. E. W. Roughton.

December 8

29 Mediastinal Tumor. W. C. Bosanquet.
30 Systematic Examination of the Eyes of School Children. N. B. Harman.

December 15

31 Diphtheria. F. M. Sandwith.

Glasgow Medical Journal

December

32 An Ophthalmic Retrospect. F. Fergus.
33 Reflexes in Cardiac Disease. Illustrated by a Case of Paroxysmal Tachycardia in which an Unusual Reflex Occurred. J. S. McKendrick.
34 The "Bruit de Roger." J. Cowan and L. Storey.
35 *Subcutaneous Treatment of Hernia in Children. A. G. Faulds.

35. **Treatment of Hernia in Children.**—In cases in which a clearly defined feeling of the various parts is to be had, Faulds considers it possible to cure the hernia by following this procedure. The child is prepared in the usual way for an anesthetic. It is placed on its back on the operating table, and its skin is thoroughly sterilized as for the ordinary operation. The operator having reduced the hernia, introduces his left forefinger into the inguinal canal by invaginating a small part of the scrotum, and feels both pillars of the ring. By doing this, he can easily feel the length of the opening, and determine the number of stitches necessary for its occlusion; seldom more than two, and sometimes only one stitch is required. He then takes a strong curved needle armed with a stout silk thread, pierces the skin about the top of the opening, and feels with his forefinger in the inguinal canal the point of the needle as it comes through the pillar of the ring. He thus has the hernia reduced and the sac behind his finger, which is in the canal, with the spermatic cord also behind. He then guides the point of the needle to the opposite pillar, and, taking a good bite of the other pillar, brings the point of the needle out through the skin. He again introduces the needle into the point of exit and brings it down on the long axis of the canal in the subcutaneous fat. He next pierces the pillar of the canal, and guides the needle again across to the opposite pillar, taking a good bite of it, then, traveling again in the subcutaneous tissues, brings the point of the needle out at its original entrance. He thus has the opening of the canal, as it were, in pursed strings, and, pulling the whole together, closes the ring, leaving sufficient room for the spermatic cord. By this procedure the skin and subcutaneous tissues are puckered together, but by catching the skin with a pair of dissecting forceps, and with a little manipulation, the skin and subcutaneous fat can be freed, and the ligature can be tied home on the pillars of the ring. A reef-knot is then tied as tightly as possible, and by lifting up the skin at the point of entrance of the knot with a pair of forceps the ligature is submerged, and thus no trace of operation in a few days can be found.

The canal is thus closed. The two surfaces of the sac have been brought together, room is left for the spermatic cord, and, as the child is kept at rest in the after-treatment, adhesions take place which are strengthened by the growth of the child, and the cure of the hernia is thus effected.

Journal of Hygiene, London

November

36 Investigations on the Toxicology of Tin, with Special Reference to the Metallic Contamination of Canned Foods. S. B. Schryver.
37 Progress of Ankylostomiasis in Cornwall. A. E. Boycott and J. S. Haldane.
38 *Nature of the Cellular Elements Present in Milk. R. T. Hewlett, S. Villar and C. Revis.
39 British Industrial Anthrax. C. H. W. Page.
40 On Heterologous Agglutinins, Particularly those Present in the Blood Serum of Cerebrospinal and Typhus Fever Cases. W. J. Wilson.
41 *Comparison Between the Germicidal Power of a Disinfectant in Solution and in the Emulsified State. R. E. Massey.

38. **Cellular Elements in Milk.**—The authors briefly sum up those facts which support the view that the cells found in milk are for the most part not leucocytes, as follows:

1. The cells present in milk (the so-called leucocytes) are very diverse in nature, and when critically examined, the majority distinctly differ from leucocytes.
2. However fresh the milk may be, the vast majority of the cells in it never stain like active leucocytes with ordinary blood stains.
3. Though many multinucleated cells are present, the majority of these are distinctly different from polymorphonuclear leucocytes.
4. The cells present in milk, however fresh, are scarcely ever amebold.
5. Ingestion of bacteria by the cells present (phagocytosis) is practically absent.
6. In milk obtained from perfectly healthy cows these cells may occur in vast numbers, and since the mammary gland in structure resembles other glands, it is against analogy that vast numbers of leucocytes should occur in its secretion.
7. The cause of the presence of a considerable number of cellular elements at times when there is no obvious reason, such as in quarters of the udder which have a previous history of mastitis, etc., but have recovered, is easily explained if these cells are tissue cells and not leucocytes.

41. **Germicidal Power of Disinfectants in Emulsified State.**—Experiments made by Massey showed that the germicidal power of emulsified disinfectants is greater than can be accounted for by the activity of the active constituent. A weak emulsion of tragacanth, when kept between 20 and 40 C. was found to delay solution of phenol for about 15 minutes, and, in the case of the difficultly soluble cresols, the particles could be detected after three hours. Although the temperature and strength of the disinfectant were varied, the emulsion was slightly stronger in each case.

Australasian Medical Gazette, Sydney

November

42 History of the Sydney Hospital. T. Flaschi.
43 Schlösser's Method of Deep Injections in Grave Trigeminal Neuralgia. R. S. Skirving.
44 Aortic Aneurism. J. C. Verco.
45 Artificial Feeding of Infants. A. G. Salter.
46 Treatment of Infantile Paralysis. R. B. Wade.
47 Surgical Technic in Intussusception Cases. E. H. Binney.
48 Calcium and Eclampsia. A. C. F. Halford.
49 Cancer of the Cecum, Complicating Myoma. R. Worrall.
50 Prostatectomy. R. S. Bowker.
51 Furunculosis Treated by Vaccine. J. J. Holland.
52 Vitiligo. S. N. Alti.

Journal of Laryngology, Rhinology and Otology, London

December

53 Uniform Acoumetric Formula Accepted by the Eighth Otological Congress at Budapest. J. Möller.
54 *Clinical Value of the Labyrinthine Nystagmus Tests (Analysis of Forty-two Cases). D. McKenzie.

54. **Labyrinthine Nystagmus Tests.**—McKenzie summarizes the results of his examinations as follows:

1. In otosclerosis the activity of the vestibular sense bore no relationship to the severity of the deafness.
2. In noise-deafness, concussion-deafness and deafness from meningitis the vestibular reactions were impaired.
3. In syphilis of the labyrinth the vestibular organ was not invariably affected in proportion to the cochlear.
4. In hysterical deafness the vestibular sense was impaired in proportion to the severity of the deafness.
5. In neurasthenic deafness the vestibular system was hypersensitive.
6. In perceptive deafness of indeterminate causation no conclusions were arrived at.
7. In chronic uncomplicated suppuration of the middle ear and in acute mastoiditis, the vestibular reactions were normal or slightly exaggerated.
8. In circumscribed labyrinthitis the vestibular sense as tested by measuring the caloric induction-period was impaired; and the impairment was increased after cure by the simple radical mastoid.
9. A case of labyrinthitis was found with spontaneous nystagmus to the opposite side, and with normal vestibular caloric reactions.
10. In temporo-sphenoidal abscess the reactions were normal.
11. After the radical mastoid in uncomplicated middle-ear suppuration, the reactions were hastened in two cases and delayed in one.

Annales de Gynécologie et d'Obstétrique, Paris

November XXXVI, No. 11, pp. 657-720

55 Technic of Conservative Cesarean Section. (Technique de l'opération Césarienne conservatrice.) A. Couvelaire. Id. (Sutures dans l'opération césarienne.) A. Herrgott.

Annales de l'Institut Pasteur, Paris

November, XXIII, No. 11, pp. 841-936

56 Oxidizing Enzymes. J. Wolff and E. de Stoecklin.
57 Yellow Fever at Martinique in 1908. (Etude de l'épidémiologie amarile.) Simond, Aubert and Noc. Continued.
58 Mechanism of Immunization against Fowl Cholera. (Sur le rôle des leucocytes chez les animaux neufs et immunisés, infectés artificiellement par le microbe du choléra des poules.) A. Sulima.
59 Passage of Microbes through Intestinal Wall in Experimental Strangulation. P. Ikonnikoff.

Annales de Médecine et Chirurgie Infantiles, Paris

December 1, XIII, No. 23, pp. 793-828

60 Campaign against Infant Mortality. (Puériculture.) Périer and Gaujoux.
61 Nasolachrymal Pathology in Inherited Syphilis. Antonelli.

Archives Générales de Chirurgie, Paris

November, III, No. 11, pp. 1101-1210

62 *Perforated Gastric Ulcer. (Ulcère perforé de l'estomac traité et guéri par le drainage sans suture.) M. Leroy and J. Minet.
63 Successful Intrauterine Autoplastic Operation with Flap of Vaginal Mucosa for Cicatricial Stenosis of Cervix. G. Potel.
64 *Cicatricial Stenosis of Uterus of Therapeutic Origin. P. Mauclaire and C. Burnier.

62. **Perforated Ulcer of the Stomach.**—Leroy has been able to find records of 53 cases in France with prompt operation. The list includes only 15 with a successful outcome, and he reports another. His patient was a young woman free from digestive disturbances until the sudden onset of symptoms of gastric ulcer with perforation the fifth day. The lack of vomiting after the first led to the assumption that the perforation was in the posterior wall of the stomach so that the organ emptied its contents during the frequent retching not through the cardia but through the perforation into the sac of the omentum. The perforation occurred some time after a meal, but forty hours elapsed before the operation. Prompt recovery followed with drainage without immediate suture, and the patient has been in comparatively good health for six months to date.

64. **Cicatricial Stenosis of the Uterus of Therapeutic Origin.**—Mauclaire presents and reviews a number of cases of stenosis resulting from cauterization with the actual cautery or a caustic or curetting of the uterus, obstetrical intervention or a surgical operation on the cervix, especially the Schraeder operation. If the stenosis is left uncorrected, painful menstruation and sterility are the rule, and an abnormal pregnancy follows if conception occurs. He reviews the various measures that have been applied in treatment, generally with excellent results.

Archives des Maladies du Cœur, etc., Paris

November, II, No. 11, pp. 609-672

65 Historical and Critical Study of Paroxysmal Tachycardia and its Origin. H. Vaquez.
66 Intense Eosinophilia in Carriers of *Filaria Loa*. (Valeur de l'éosinophilie chez les malades porteurs de "filaria loa.") L. Nattan-Larrier and M. Parvu.

Bulletin de l'Académie de Médecine, Paris

November 30, LXXIII, No. 39, pp. 335-402

67 The Bacillus Proteus in Gastrointestinal Infection. (Association microbienne protéo-typhique.) H. Vincent.

December 7, No. 40, pp. 403-426

68 *Antityphoid Inoculation. (Prophylaxie et vaccination contre la fièvre typhoide.) A. Chantemesse.

68. **Antityphoid Inoculations.**—Chantemesse reviews the history of antityphoid inoculations, referring to his own pioneer work in this line in 1888, when he immunized mice by inoculation with killed typhoid bacilli. In 1899, after Wright's practical application of antityphoid vaccination to British troops in Africa, Chantemesse proposed vaccinating his assistants and pupils in his hospital service where professional typhoid infection was sadly frequent. His suggestion was accepted and the entire force in the service were injected with typhoid cultures sterilized by heat. Among the interns were Armand-Delille and Guerbet, now professor at Rouen. The agglutinating power of the serum increased in consequence of the inoculation to 100, 150 and 200 in a few weeks, and then gradually declined as the years passed, but the fixation reaction has continued positive to date. During the year just closed Guerbet accidentally swallowed several drops of a culture of typhoid bacilli while aspirating it into a pipette, but no symptoms followed; it seems probable that the antityphoid inoculation ten years before was responsible for the harmless outcome of the incident. Chantemesse had three accidents of this kind among his assistants before the inoculations were attempted, one young intern succumbing to perforation of the intestines in the severe typhoid developing six days after aspiration of the typhoid bacilli. Chantemesse urged the appointment of a committee to study the advantages and disadvantages of prophylaxis of typhoid by this method, so that the academy could officially endorse or reject it. A recent editorial in THE JOURNAL, Jan. 1, 1909, page 55, also discusses the practical value of antityphoid inoculation.

Presse Médicale, Paris

December 1, XVII, No. 97, pp. 865-880

69 Infantilism and Funiness. (Infantilisme et chétivisme.) A. Bauer.

December 8, No. 98, pp. 881-888

70 Adrenalin in Treatment of Recurring Polymorphous Dermatitis. F. Balzer and Guénot.
71 Exfoliation Treatment in Dermatology. L. M. Pautrier.
72 *Electric Test for Traumatic Neuroses. (La névrose traumatique: son syndrome réactionnel électro-musculaire.) J. Larat.

72. **Electric Test for Traumatic Neurosis.**—Larat gives the tracings in seven cases of traumatic neuroses to show the peculiar electromuscular contractions which seem to be specific for traumatic nervous diseases and are not observed in any others. The response to galvanism is increased, the anodic closure contraction equaling or surpassing the cathodic closure contraction. In health the latter surpasses the former by two-thirds. The peaks in the tracings are not rounded as in the reaction of degeneration, but are sharp and angular as with normal contractions. The increased excitability is observed both on the affected and the sound side. These findings confirm the assumption that a traumatic neurosis is a general neuropathic disturbance of the nerve centers, not a local affection.

Revue de Chirurgie, Paris

December, XXIX, No. 12, pp. 867-1020

73 *Segmentary Atrophy of the Colon. (Atrésie congénitale du colon: microcolon.) J. Okinczyc.
74 *Symmetrical Lipomatosis. (La lipomatose symétrique à prédominance cervicale et son traitement chirurgical.) C. Lenormant and M. Verdun. Commenced in No. 11.

73. **Microcolon.**—Okinczyc has encountered two cases of segmentary atrophy of the colon with no indications of preceding inflammation. The findings were an autopsy surprise; both cases were in adults. He has been able to find several such cases on record but all the others were in new-born infants. He thinks it probable that the trouble is the result of torsion of some loop of the intestine, the same factor which is presumably responsible for certain cases of megacolon.

74. **Symmetrical Lipomatosis.**—Fifty-eight cases are summarized from the literature in which diffuse lipomatosis, mainly in the neck, received operative treatment. In only 27 cases was the operation completed at one sitting, the others requiring from 2 to 5 sittings. The tedious operation is not difficult and the results were good in all the cases. In 8 the cure was complete; in 8 the fragments left increased in size, and in 5 the symmetrical lipomas grew again. The ultimate history of the 37 other patients is not known, but the results reported seem to justify prompt operative intervention, the authors think, even if it has to be repeated later.

Semaine Médicale, Paris

December 1, XXIX, No. 48, pp. 565-576

75 *Albuminuria in Connection with Tuberculosis. (Albuminurie prétuberculeuse et albuminurie paratuberculeuse.) J. Teissier.

75. **Albuminuria and Prognosis of Tuberculosis.**—Teissier relates a number of instances that confirm his previous announcements in regard to the importance of periodical albuminuria as the precursor of tuberculosis, and of another form of albuminuria, in the children of tuberculous parents, who are saturated with tuberculosis antibodies. Persons with

this latter "paratuberculous albuminuria" are practically immune to tuberculosis. The significance of the two forms is thus important for the prognosis, the former leading to phthisis, the latter leading away from all tuberculous infection. He has encountered over 20 cases of the pretuberculous albuminuria in which the urine was rather scanty, and pale in the morning, at which time the albuminuria generally occurs, subsiding in the afternoon when the urine becomes darker and turbid; it is excessively toxic at all times. The elimination of albumin is generally intermittent or cyclic, or it may assume the orthostatic type except that the maximum is usually about 11 a. m. The kidney is very permeable, and the phloridzin test for sugar is strongly positive; there is no serореaction and the arterial tension persists constantly normal. As this pretuberculous albuminuria subsides, signs of active tuberculosis become evident. Teissier explains the albuminuria as the result of the destruction of the invading tubercle bacilli, the products thus set free inducing the albuminuria on their passage through the kidney. When the organism is no longer able to accomplish the destruction of the bacilli, they proceed to induce an active process, while the albuminuria completely ceases. In the paratuberculous albuminuria, on the other hand, the arterial tension is permanently abnormally high, frequently 18 mm. mercury, the serореaction is pronounced while the kidneys are not quite normally permeable, but display evidences of a slight tendency to cirrhotic nephritis, all the features suggesting parental impregnation of the organism with tuberculous toxins, thus inducing an autoimmunization. In 100 cases of intermittent albuminuria in his practice, 34 of the patients had a tuberculous family history; only 6 presented albuminuria of the pretuberculous cyclic morning type, preceding fatal infection. In the 28 other cases the albuminuria was of the paratuberculous type, and although symptoms suggestive of tuberculosis developed in a few, yet invariably spontaneous retrogression followed and the patients are still hale and hearty.

Berliner klinische Wochenschrift

December 6, XLVI, No. 49, pp. 2177-2224

76 Symptomatology of Acute Anterior Poliomyelitis. O. Foerster.
77 *Cure of Paralysis of Shoulder Muscles by Plastic Operation. (Heilung von Schultermuskellähmungen—M. trapezius bzw. serratus—durch kombinierte Muskelplastik.) M. Katzenstein.
78 Origin and Treatment of Hyperchlorhydria in Smokers. (Entstehung und Behandlung des Magensaftflusses der Gewohnheitsraucher.) M. Skaller.

77. Cure of Paralysis of Shoulder Muscles by Plastic Operation.—Katzenstein reports a successful plastic operation for severe paralysis of the trapezius and serratus muscles. He transplanted the pectoralis major from the upper arm to the median margin of the scapula and also changed the point of attachment of the trapezius and rhomboideus muscles in one case. In another case he used flaps from the sound trapezius and latissimus dorsi to take the place of the paralyzed trapezius.

Correspondenz-Blatt für Schweizer Aerzte, Basle

December 1, XXXIX, No. 23, pp. 801-832

79 *Course of Pulmonary Tuberculosis under Therapeutic Pneumothorax. L. Spengler.

79. Therapeutic Pneumothorax.—Spengler's experience with 40 cases was favorable in 25; merely transient benefit was observed in 6 and slight benefit in 6 more, while the effect was bad in 3 other cases. The measure evidently should be restricted to severe unilateral tuberculosis. If pleuritic adhesions interfere with the attempt to induce pneumothorax, an extensive extrapleural plastic operation on the thorax may be advisable. The therapeutic pneumothorax must be maintained for a year or so. He prefers the Murphy-Brauer technic, rejecting Forlanini's as dangerous on account of the liability to gas embolism.

Deutsche medizinische Wochenschrift, Berlin

December 2, XXXV, No. 48, pp. 2097-2152

80 Serotherapy and Prophylaxis in Foot-and-Mouth Disease. (Die Serotherapie, die Seroprophylaxe und die Impfung bei Maul- und Klauenseuche und deren Wert für die Veterinärpolizei.) F. Loeffler.
81 Indications and Contraindications for Sigmoidoscopy. H. Strauss.
82 Therapeutic Action of Stasis Hyperemia in Erysipelas. (Stauungshyperämie bei Erysipel.) G. Jochmann and C. Schöne.
83 Determination of Tubercle Bacilli in Sputum by Ellermann-Erlandsen Technic. (Nachweis von Tuberkelbazillen im Sputum nach der Doppelmethode von Ellermann-Erlandsen.) H. Kögel.
84 Staining of Sections. (Färbung von Schnittpräparaten mit der Giemsaschen Azur-Eosin-Methode.) A. Schuberg.
85 *Momburg Belt Tourniquet. (Zur Technik der Blutleere der unteren Körperhälfte.) Momburg.
86 Treatment of Chronic Deformities. Andreae.
87 Apparatus for Mobilization of Wrist and Finger Joints in Superheated Air. (Hand- und Fingergelenk-Mobilisierungsapparat im Heissluftbad.) F. Bähr.
88 Diagnosis of Ovarian Tumors and their Interference with Delivery. (Ovarientumoren und ihren Geburtsstörungen.) R. Jolly.
89 Death from Hanging. (Zur Lehre vom Erhängungstode.) A. de Dominicis.

December 9, No. 49, pp. 2153-2200

90 *Successful Removal of Fibroma in the Pancreas. W. Körte.
91 *Spinal General Anesthesia. (Die Rhachianästhesie zur Anästhesierung sämtlicher Körperregionen.) T. Jonnesco.
92 Intestinal Autointoxication. (Die Wiederbelebung der intestinalen Autointoxikationslehre in Frankreich und der "Combismus.") A. Schmidt.
93 *Transition of Chronic Myeloid Leucemia into Acute Myeloblast Leucemia. C. Klieneberger.
94 *Treatment of Syphilis with Quinin. (Weitere Erfahrungen über die Behandlung der Syphilis mit Chininpräparaten.) R. Lenzmann.
95 *Resection of Pelvis for Sarcoma. (Beckenresektion wegen Sarkom.) H. Riese.
96 *Infant Feeding at High Altitudes. (Der Säugling im Hochgebirge.) H. Neumann.
97 *Improved Roentgen-Ray Technic. (1. Identifikation von Punkten im Röntgenbilde, ein teilweiser, aber objektiver Ersatz der Röntgenostereoskopie. 2. Gleichzeitige Doppelaufnahmen von Röntgenbildern.) M. Levy-Dorn.

85. The Momburg Belt Tourniquet.—Momburg writes from Bier's clinic at Berlin to call attention to a few minor points in the technic. The pelvis should be raised rather high in order to have the intestines slide down out of the way. This also removes a large proportion of the nerve terminals from the pressure of the tube wound around the waist. He does not hesitate to shake the abdomen to aid in the settling down toward the diaphragm of the intestines. He reiterates his advice to apply the Esmarch bandage to both thighs as a preliminary measure. Merely the amount of blood normally in the legs is retained in them by this bandaging; without this, raising the pelvis would send too much blood down to the heart region. Instead of pulling hard on the rubber tube he advises winding it around more times. The technic has been applied in over 200 cases to date, including 2 patients with cardiac defects who bore it without mishap. A pad is not necessary but the friction as the tube is drawn under the sacrum must not be forgotten; when this is overlooked the constriction may not be as even as supposed. (The technic for applying the constricting belt was illustrated in THE JOURNAL, Oct. 30, 1909, page 1519.)

90. Successful Removal of a Fibroma in the Pancreas.—Körte thinks that this is the first case of the kind on record. The patient was a woman of 51 and the tumor in the pancreas had been noticed ten months before its removal, but caused no disturbance except from compression of the neighboring organs. No benefit seemed to be derived afterward from the dietetic measures that have been recommended as helping to heal the fistula into the pancreas. He had this same negative experience with three other cases of pancreatic fistula, the secretion showing no change. In all his cases the outflow ceased spontaneously in five or six weeks.

91. See THE JOURNAL, Nov. 27, 1909, page 1831.

93. Fulminating Modification of Chronic Leucemia Under Roentgen-Ray Treatment.—Klieneberger reports two cases in which a chronic myeloid leucemia suddenly changed into an acute and fatal myeloblast leucemia after Roentgen treatment. This acute transformation should be guarded against by refraining from continuing *x*-ray treatment when no further benefit is apparent, and immediate suspension when myeloblasts appear in large numbers. This transformation is so unusual, however, he adds, that it should not deter physicians from Roentgen-ray treatment under these precautions.

94. Treatment of Syphilis with Quinin.—Lenzmann says that sooner or later the syphilis germ seems to become refractory to mercury and iodid and then quinin may be usefully applied.

95. **Resection of the Pelvis for Sarcoma.**—Riese has performed this operation twice in the last eight months and has found the Momburg belt tourniquet an important aid in the removal of a sarcoma near the sacro-iliac articulation. The tumor had a broad base and was as large as two fists; the patient was a girl of 13. Under the belt constriction the operation was done without loss of any blood, while the bloodless condition of the vessels much facilitated the operation. There seemed to be some more or less transient disturbance in the splanchnic innervation afterward, weakness in the domain of the femoral and sciatic nerves and paralysis of the peroneal. He does not know whether to ascribe this to the constriction or to pressure from the splint or the retractors used during the operation.

96. **Mountain Resorts for Infants.**—Neumann has been investigating conditions in Switzerland and has found that the dryness and the purity of the air and the sunshine seem to ensure the thriving of infants, regardless of the method of feeding. He urges sending infants and small children to mountain health resorts as a therapeutic measure even in winter. Rachitis is unknown and nervous troubles are rare in Arosa at an altitude of about 5,500 feet.

97. **Improved Skiagraphy.**—Levy-Dorn describes a method to obtain the effect of stereoscopy without the usual complicated technic. A cork an inch and one-third high, pierced with a pin, is used to center the skiagrams. After the exposure has been made the object is covered with a sheet of lead and the tube is moved to the second position as for a stereoscopic exposure, but only the cork is exposed this time and only for a brief second. The plate is then changed, the object exposed, then covered with lead as before, and the tube moved back to the first position and the cork alone exposed again for a second. The shadow of the pin in the cork gives the centering point. Another method is to take the skiagraph of the object on the same plate from both positions of the tube. By raising the object a certain distance above the plate, it is possible to cast the shadow diagonally in turn first on one half of the plate and then on the other.

Fortschritte der Medizin, Paris

November 20, XXVII, No. 32, 1201-1232

98 *Breast-Fed Infants who are Not Thriving. (Schlecht gedeihende Brustkinder.) M. Thiemich. Commenced in No. 31.

98. **Breast-fed Infants Who Are Not Thriving.**—Thiemich warns that when children are not thriving on breast milk the trouble is not with the milk but with the child in almost every instance. Constitutional disease in the child and infection from the parents may interfere with the infant's thriving, and breast milk does not guarantee against this. But breast milk is all the more urgently needed in these very cases and the physician must ponder well before he consents to the weaning of the child even when it does not seem to be doing well on breast milk. He relates a number of typical instances in which the child did not gain in weight for months at a time but the discovery of previously unsuspected tuberculosis in the family or of some acute infectious process in the mother or inherited taint in the child explained the conditions. The tendency to eczema is frequently responsible for the lack of thriving; children with this exudative diathesis seem to display some anomaly in the metabolism of fat.

Jahrbuch für Kinderheilkunde, Berlin

November, LXX, No. 5, pp. 529-666

99 *The Exudative Diathesis, Scrofula and Tuberculosis. A. Czerny.

100 Clinical and Anatomic Study of Congenital and Early Acquired Rachitis. II. (Anatomische Untersuchungen über sogen. angeborene und über frühzeitig erworbene Rachitis.) E. Wieland.

101 Histology of Infant Intestine. (Histologische Untersuchungen des Darmes von Säuglingen.) N. Reika.

102 Action of Lime Ions on Water-Absorbing Power of Cartilage. (Wirkung der Ca-Ionen auf das Wasseradsorptionsvermögen des Knorpelgewebes und ihre Bedeutung in der Pathogenese des rachitischen Prozesses.) N. Krasnogorski.

99. **Prevention and Cure of Eczema, Catarrh, etc., in Infants: the Exudative Diathesis.**—Czerny's conception of a congenital tendency to processes with exudation is important from the fact that he seems to be proving that this diathesis is as amenable to dietetic measures as diabetes, and can thus be kept latent until the child outgrows it, or it can be fanned into a flame by the food. The constitutional anomaly usually soon becomes evident by the progress of different infants under the same conditions of feeding. According to the nature of the anomaly, the alimentary disturbance induces either rachitis, anemia, nervous irritability or processes with oozing, such as milk crust, eczema, strophulus and catarrhal affections of various mucosæ, especially of the air passages and the status lymphaticus. The first two years of life are the most important for the development of this exudative diathesis. As the child grows older the tendency decreases, in direct contrast to what is observed with the uric acid diathesis. Besides improper feeding, intercurrent infections are liable to rouse the latent diathesis to active manifestations or to aggravate it if existing; this is frequently noticed after vaccination. He explains the rapid increase in weight of the new-born infant as due mostly to the intake of water; the infant, like the seed, has stored up in itself the elements of growth and needs merely water for them to expand in rapid growth and development. After the first four or six months the child depends on the nourishment supplied from without for its further growth. Born with the exudative diathesis, any oversupply of food during the first few months, even excess of water, evokes manifestations of this congenital defect in the chemistry of the body. He thinks it probable that this defect involves particularly the tissues which render possible the fluctuations in the water content of the organism. Overfeeding, especially with milk and eggs, rouses the latent tendency to activity and is one reason why this diathesis torments mostly well-to-do families. The derangement is probably in the fat metabolism as the children who are able to tolerate only a small proportion of milk-fat are the ones who show the most pronounced types of the diathesis and for whom the slightest overfeeding is particularly injurious. The manifestations, he says, can be induced and banished at will in young infants by measures to increase or to reduce the water content of the body. In his clinic at Breslau he has numbers of children with tuberculosis grafted on the exudative diathesis, but as he is able by dietetic measures to correct the latter tendency and keep this diathesis in check, the tuberculous children show no signs of "scrofula." The status lymphaticus, he adds, is probably one manifestation of the exudative diathesis as it can be checked and cured by the same dietetic measures. Children with the exudative diathesis do not thrive so well on a purin-poor diet.

Medizinische Klinik, Berlin

November 28, V, No. 48, pp. 1803-1840, and Supplement

103 *Modern Treatment of Congenital Dislocation of the Hip-Joint. (Die moderne Behandlung der angeborenen Hüftluxation.) O. Vulpius.

104 *Puncture of the Corpus Callosum to Reduce Intracranial Pressure in 22 Cases. (Allgemeiner Bericht über 22 Gehirnoperationen mittels Balkenstiches.) G. Anton.

105 *Serodiagnosis of Syphilis with Autopsy Control. (Klinische Beobachtungen über die Wassermann-Neisser-Bruckschc Reaktion und deren Kontrolle durch Sektionsresultate.) F. Glaser and I. Wolfsohn. Commenced in No. 46.

106 *Pyloric Spasm and Stenosis in Infants. (Pylorusspasmus und Pylorus-stenose im Säuglingsalter.) B. Bendix.

107 *Quinin and Cancer. (Chinin und Krebs.) F. Stroné.

108 *Paraffin Treatment of Chronic Constipation. Lipowski and O. Rhode.

109 Pathology of Tuberculosis in Children. (Pathologie der Kindertuberkulose.) Engel.

December 5, No. 49, pp. 1841-1876

110 *Causes of Pain in Gynecologic Conditions. (Ursachen der Schmerzempfindung auf dem Gebiete der Gynäkologie.) E. Opitz.

111 *Intestinal Functioning. (Ueber normalen Darm und normale Darmentleerung.) S. Federn.

112 Serotherapy of Diphtheria. F. Reiche.

103. **Treatment of Congenital Dislocation of the Hip-Joint.**—This article seeks to impress on the general practitioner the necessity for early diagnosis and prompt treatment of the condition in all circumstances. Left untreated, further deformity results, limping and scoliosis of the spine with unilateral dislocation, lordosis when deformity is bilateral. Vulpius is a consistent advocate of this bloodless technic which he describes in detail, stating that functional healing or great improvement has been attained in over 90 per cent. of his cases, the few failures being due to neglect of the limits imposed by age or to lack of proper cooperation on the part of the family. No child is too young for treatment to be

commenced, but bilateral dislocation can seldom be successfully corrected after the age of 6 and unilateral after 10. The most auspicious age is during infancy. An ideal result was obtained in only 60 or 70 per cent. of his unilateral and in 40 or 50 per cent. of the double dislocations, but the patient and family are generally content with functional success.

104. **Puncture of Corpus Callosum.**—Bramann and Anton's success in opening artificially a communication between the ventricle and the subdural space has already been mentioned in THE JOURNAL, Oct. 30, 1909, page 1520. A small trephin opening is made behind the coronary suture and a cannula introduced down to the falx cerebri and along this to the corpus callosum through which the tip of the cannula is pushed. This opens a passage for the cerebrospinal fluid from the ventricle into the subdural space and thus reduces the intracranial fluid pressure in the ventricle. Anton has performed this operation on 22 patients and the results have surpassed his anticipations. It diverts the fluid in hydrocephalus, thus preventing deformity of the skull, compression, and atrophy of the brain. It has also relieved in cases of brain tumors, averting danger of congestion and hyperemia in the optic nerve and restoring conditions approximately to normal. The tormenting vertigo, headache and vomiting were promptly and favorably influenced in a number of cases. The symptoms induced by the tumor were thus rendered plainer and time was gained to postpone the removal of the tumor until its site and nature could be more accurately determined. It is even possible in puncturing the corpus callosum to explore the ventricle and detect any change in its shape or contents. The puncture of the corpus callosum is also useful as a preliminary to or during an operation on the skull in which there is danger of hernia or laceration of the brain. It should also be given a trial, he declares, in cases of steeple skull and similar deformities in which there is danger of injury of the optic nerve from compression.

105. **Serodiagnosis of Syphilis and Autopsy Findings.**—In the extensive research described, signs of syphilis were found postmortem in all cases in which the Wassermann test had given positive findings, except three. In these three the disease may have healed so completely as to leave no anatomic trace. But the autopsy positive findings were often merely scars, so that a positive seroreaction by no means indicates always active virus.

106. **Treatment of Spasm and Stenosis of the Pylorus in Infants.**—Bendix regards these affections as pertaining exclusively to the domain of the internists, with breast milk as the main reliance. After a day on which nothing but water is allowed, he lets the infant nurse at will, but if vomiting is very frequent and copious he restricts the amount and increases the number of feedings. From six to eight weeks may pass before distinct improvement becomes evident and the physician must be firm and not let himself be dissuaded from breast-milk feeding, supplementing the child's nursing possibly by rectal enemas of breast milk, from 50 to 150 gm. several times a day. He lays great stress further on supplying fluids freely to the child to prevent water starvation. He does not approve of lavage of the stomach except possibly once at the beginning of treatment; it is liable to induce severe collapse. Moist heat to the stomach region, especially before meals, frequent warm baths, and small doses of opium with valerian or an alkali are the main reliance. He has never had to call in a surgeon, finding that a turn for the better occurred invariably by the end of the fifth or sixth week. The first sign of improvement is when the child ceases to lose weight.

107. **Quinin and Cancer.**—Stroné has treated epithelioma with local application of quinin stirred with water to a paste and applied with a cotton wad in a number of cases in which operation was refused. In every instance the quinin had a caustic action on the growth, eating it out until the ulceration was three times or more the size and depth as at first. He renewed the quinin every second day for four times. The lesion then began to heal over under a simple iodoform dressing, and by the twentieth day had entirely healed. This experience has been repeated too many times, he asserts, for it to be a mere coincidence; the quinin applications are continued until the lesion ceases to spread under its influence. They are also useful, he believes, in palliative treatment of inoperable uterine cancer. The quinin also serves to differentiate cancer from ordinary erosions; with the latter there is none of the destructive action observed with cancer. He advises application of quinin as a preliminary to radical operation as it aids in clearing up the diagnosis.

108. **Paraffin in Treatment of Chronic Constipation.**—Lipowski here reports the details of 8 typical cases in which he successfully applied his method of paraffin treatment described in THE JOURNAL, Sept. 4, 1909, page 822.

110. **Causes of Gynecologic Pain.**—Opitz has made a point of examining all his patients regularly to detect the three cardinal symptoms of hysteria: the modifications of sensibility, the changes in the reflexes and the hysterogenous zones. Much to his surprise he has encountered this triad in the overwhelming majority of all his gynecologic patients. It seems absolutely impossible to believe that such a large proportion of women can be typical hysterics as these findings would seem to prove. He protests against the idea that suggestion plays an important part in treatment of gynecologic affections, citing among the arguments against this assumption the fact that a new method of treatment instituted by the same physician and under the same conditions otherwise may cure while all previous measures proved unavailing. The trouble is to locate the underlying organic affection and not label everything neurasthenia or hysteria that we are as yet unable to explain. An explanation can be found if diligently sought. One frequent cause for severe pain is inflammation of a vein, either of the wall tissue itself or of the nerve terminals in it. In one case intense pain for which no cause could be discovered ceased abruptly as thrombosis developed in the vein in the region. When irritated, the sympathetic nerve can transmit sensory stimuli, and he is convinced that many affections now classed as functional neuroses are in reality due to irritation of some portion of the sympathetic system, such as the pain in front of the spine in the epigastrium, which sometimes accompanies enteroptosis or may occur without it, and for which the solar ganglion is evidently responsible. With it the aorta can generally be palpated as a pulsating tender cord. In four cases he discovered varicose changes in the large veins in the small pelvis at the point where the patients experienced great pain for which no cause could be discovered until the laparotomy revealed the changes in the veins. The pain subsided after simple ligation of the ovarian vein. Other experiences have shown that mere congestion in the veins, causing distention, may elicit pain. In some cases the pain develops when the patients lie in the dorsal decubitus, while it ceases in other positions, confirming the assumption of local congestion as the cause. In these cases a specially tender point can generally be detected at the hypogastric or ovarian vein; sometimes a varicose enlargement can be palpated. It is possible that medical measures alone, hydrotherapy, general measures to combat the plethora in the pelvis, with possibly gentle massage of the region through the vaginal wall, might prove effectual. Dysmenorrhea may be due to this cause in some cases, especially with a tendency to retarded development of the genitalia.

111. **Normal Intestinal Functioning.**—Federn reiterates his assertions in regard to the great frequency of partial atrophy of the intestines causing retention and antointoxication as with residual urine. For twenty years he has been studying the subject and has been able to detect this tendency to localized atrophy by delicate percussion along the course of the bowel. The importance of this segmental atrophy, inducing conditions of toxin production and absorption, cannot be overestimated, he declares. He has found the blood pressure permanently high in all such cases. He discusses in detail the physiology of the normal intestine.

Münchener medizinische Wochenschrift

November 30, LVI, No. 48, pp. 2457-2504

113 *Chronic Jaundice. (Zur chirurgischen Behandlung des chronischen Ikterus.) H. Kehr.
114 Early Phases of Acute Poliomyelitis. (Frühstadien der spinalen Kinderlähmung.) E. Muller.
115 *Immediate Massage of the Heart in Anesthesia Asphyxia. (Unmittelbare Herzmassage bei Narkosentod.) E. Rehn.

116 *Saline Infusion as Aid to Prognosis in Peritonitis. (Lässt sich für die Anwendung der intravenösen Kochsalzinfusionen bei der Peritonitis eine bestimmte Indikationsstellung ergrunden?) A. v. Lichtenberg.
117 Treatment of Fractures. (Frakturbehandlung nach Steinmann und nach Zuppinger.) T. Christen.
118 Myocarditis and Changes in Striped Muscles in Rheumatism. (Ueber Myokarditis und Veränderung der quergestreiften Muskeln bei Rheumatismus.) P. Geipel.
119 Seroreaction in Scarlet Fever. (Komplementbindung bei Scharlach.) A. Uffenheimer.
120 Tuberculin Salve Test. (Ueber die Morosche Salbenprobe.) F. Weil.
121 Improved Technic for Differentiation of Bacteria. (Veränderungen zweier Nährböden — Rosolsäure- und Blutagar — durch Säure bezw. Alkali bildende Bakterien.) M. Mandelbaum.
122 Psychophysical Examination with the Galvanometer. F. Peterson and E. W. Scripture.
123 Esophagoscopy in 110 Cases. T. Kölliker.
124 Electrocardiogram of Absolute Irregular Pulse. (Fehlen der Vorhofzacke (P) im Elektrokardiogramm beim Irregularis perpetuus.) H. E. Hering.
125 Affinity for Iodin of Adrenalin. R. Hoffmann.

113. **Chronic Jaundice.**—This article is an appeal by Kehr for an earlier diagnosis of cancer of the biliary passages. He frequently has to operate in cancer cases in which the patients have been treated for months on the assumption of catarrhal jaundice. When the jaundice commences without pain and increases gradually from week to week, while the gall-bladder increases in size, jaundice is the result of obstruction of the common bile duct from a tumor or cicatricial growth. But if the jaundice is accompanied or preceded by colics, if the intensity of the jaundice fluctuates, and if chills and fever are observed, gall-stone obstruction is probable. If no benefit is apparent after six weeks of bed rest, local heat and dieting, if the patient is losing appetite and strength, surgical intervention should not be longer delayed. He rejects entirely the various remedies on the market that claim to promote the secretion of bile; they have no effect, he says, except when Nature happens to accomplish coincidently a spontaneous cure, the stone making a fistula from the duct into the duodenum or otherwise escaping. But this occurs too seldom to be depended on. The danger from chronic jaundice is the development of biliary cirrhosis, cholangitis and cholemic diathesis. He does not like to assume the burden of the unsuccessful operation when the fault lies with the internist's delay, which has permitted conditions to reach an irremediable stage. No matter how guarded the surgeon's comment may be, yet the conditions speak for themselves. Practitioners should not wait to summon the surgeon until the case has no further interest for any one but the pathologic anatomist. In many cases the conditions simulate inoperable carcinoma but operation reveals merely an inflammatory condition in the pancreas capable of retrogression. The dread of postoperative hemorrhage and peritonitis is exaggerated. He lost only one patient from hemorrhage in his last series of 60 with jaundice, and this patient had cancer; there has been no tendency to peritonitis in any of his last 125 cases. In 45 of this group the patients had more or less jaundice; 36 recovered, 6 with advanced cancer or biliary cirrhosis died, and 3 succumbed to valvular disease or cachexia. In 80 other patients free from jaundice only 2 succumbed and these fatalities were due to a complicating echinococcus disease or perforation. He writes from an experience of 1,500 operations on the biliary apparatus.

115. **Direct Massage of the Heart in Chloroform Asphyxia.**—In the case reported, Rehn applied direct massage to the heart in addition to artificial respiration by the usual measures supplemented by a differential pressure procedure. The effect of the Brauer positive-pressure apparatus was prompt and striking. Two and one-third hours after the circulatory syncope the heart action and respiration were fully restored, the first signs of contraction of the heart being observed after 70 minutes. The patient was a healthy boy of 7, taking the chloroform for correction of a slight deformity on the left hand. After restoration of the circulation and respiration the condition remained satisfactory for two hours, but suddenly the breathing stopped; the heart was kept beating for four hours longer. In massaging the heart through the diaphragm the pleura had been torn but the massaging finger plugged the opening. When the hand was removed, pneumothorax followed, proving fatal. The case teaches the importance of refraining from injury of the pleura, as the circulatory syncope had been entirely conquered. The differential pressure procedure has many advantages; it dispenses with tracheotomy and permits exact dosage of the air supplied and also admixture of oxygen.

116. **Saline Infusion as an Aid to Prognosis in Peritonitis.**—Lichtenberg states that in peritonitis the degree and permanence of the improvement in the circulation following intravenous saline infusion is a reliable index for the amount of vasomotor paralysis. In health, saline infusion causes only slight and transient changes in the blood pressure but when the vascular tonicity is reduced saline infusion improves conditions and the effect persists in proportion to the recuperative power of the vessels. Saline infusion before the operation is thus useful from several points of view, improving conditions for the operation and also revealing the extent of the paralysis of the vasomotors. Addition of a little suprarenal extract magnifies the effect. If the infusion causes no improvement in the conditions in the circulation little benefit, he asserts, can be anticipated from the operation.

Wiener klinische Wochenschrift, Vienna

December 9, XXII, No. 49, pp. 1697-1736

126 Trachoma Bodies. (Die freie Initialform der Prowazekschen Einschlüsse.) K. Lindner.
127 Experimental Research on Acute Anterior Poliomyelitis. C. Leiner and R. v. Wetsner.
128 *Determination of Hemolysis and its Clinical Importance. (Nachweis und die klinische Bedeutung hämolytischer Erscheinungen.) K. R. v. Stejskal.
129 *Traumatic Hysterical Paralysis. (Hysterische Beinlähmung.) E. Raimann and A. Fuchs.

128. **Hemolytic Phenomena and their Clinical Importance.**—Stejskal describes a simple test-tube method of determining hemolytic conditions in the blood and reports a number of cases of pernicious anemia in which such were evident. The positive findings were only in patients with cirrhotic processes in the liver and congestion of bile.

129. **Traumatic Hysterical Paralysis.**—Raimann comments on a case of dislocation of the ankle, the accident occurring from defective flooring in a depot. The claims for damages led to twelve trials with almost endless medical expert testimony and the end is not yet. He cites the case to prove the importance of referring neurologic cases to the neurologists and to confirm anew the evils from the current accident insurance legislation which breeds neuroses out of trifling injuries. Blunders in diagnosis here have the most far-reaching consequences.

Zeitschrift für Geburtshülfe und Gynäkologie, Stuttgart

LXV, No. 2, pp. 283-568. Last indexed October 16, p. 1343

130 Displacement of the Ovaries. (Lageveränderungen der Ovarien.) C. H. Stratz.
131 *Retention of Membranes and Scraps of Placenta as Cause of Puerperal Fever. (Retention von Eihauten und Placentarresten als Ursache des Wochenbettfiebers.) E. Puppel.
132 Influence of Age and Number of Childbirths on Frequency of Twin Births. (Einfluss von Alter und Geburtenzahl der Mutter auf die Häufigkeit der ein- und zweieiigen Zwillingsgeburten.) W. Weinberg.
133 *Jaundice Always a Sign of Insufficiency of the Liver. (Gibt es eine den Frauen eigentumliche Form der Gelbsucht.) P. Rissmann.
134 Hemorrhagic Chronic Metritis and Endometritis. (Die Metropathia haemorrhagica.) O. Pankow.
135 Plasma Cells in Gynecologic Affections. (Ueber Plasmazellen und ihr Vorhandensein bei den Erkrankungen der weiblichen Geschlechtsorgane, speciell des Endometriums.) J. Frey.
136 Differentiation of Menstrual and Gravid Decidua. (Lässt sich mikroskopisch eine Decidua menstrualis von einer Decidua gravidilatis unter allen Umständen unterscheiden?) E. Ekke.
137 Presentation with Spine straight in Median Line. (Der hohe Gradstand: Positio occipitalis sacralis et pubica.) W. Liepmann.

131. **Retention of Fetal Membranes or Scraps of Placenta as Cause of Puerperal Fever.**—Puppel reports six cases of severe puerperal fever, the sepsis proceeding from retained membranes and recovery following their removal. He makes it a practice to examine the interior of the uterus whenever there is a tendency to fever unless medical inspection shows the expelled membranes and placenta to be complete.

133. **Jaundice in Women.**—Rissmann discusses whether or not there is any special form of jaundice peculiar to pregnancy and the puerperium, deciding in the negative, his verdict being

that jaundice is always a sign of insufficiency of the liver. The prognosis cannot be based on the jaundice alone. The insufficiency of the liver may lead to brain symptoms. In bacterial diseases there may be hemorrhages from mucous membranes, especially during pregnancy. An afebrile course, slow pulse, and only slight disturbance of the general health are signs that the jaundice in the pregnant woman is of a mild form. The behavior of the pulse is the main criterion for the prognosis. Simple mild jaundice in the pregnant woman does not seem dangerous for the child; in one such case reported jaundice for six months owing to obstruction of the common bile duct by a stone did not affect the fetus unfavorably, so far as could be discovered. If the child suffers from the jaundice the primal cause underlying the jaundice must be responsible or some complication. The intoxication causing the insufficiency of the liver or infection or fever or existing nephritis or syphilis are the factors injuring the fetus and not the bile acids. The surgical causes for jaundice must be removed, a gall-stone operation deferred no longer, and if there are indications of the severest form of jaundice the pregnancy must be interrupted. Nothing to date has been proved in regard to an embryogenic origin for the jaundice, but severe changes in the liver with jaundice such as accompany sometimes the toxemia of pregnancy, belong in the syndrome of eclampsia, with or without convulsions.

Zentralblatt für Chirurgie, Leipsic

December 11, XXXVI, No. 50, pp. 1713-1744

138 Care of Stump of Bronchus after Removal of Lung. (Zur Frage der Versorgung des Bronchusstumpfes bei Lungenexstirpation.) W. Meyer.

Zentralblatt für Gynäkologie, Leipsic

December 11, XXXIII, No. 50, pp. 1697-1728

139 Treatment of Eclampsia. A. Dienst.
140 Three Cases of Appendicitis in Pregnancy. (Appendicitis in graviditate.) F. Stähler.
141 Management of Shoulder Presentation after Death of Fetus. (Zur Behandlung der verschleppten Querlagen.) E. Herz.

Gazzetta degli Ospedali e delle Cliniche, Milan

November 30, XXX, No. 143, pp. 1513-1520

142 Persulphate of Sodium for Detection of Adrenalin. (Il persolfato di sodio come rivelatore dell'adrenalina.) F. Pancrazio.

December 5, No. 145, pp. 1521-1544

143 *Addison's Disease. (Osservazioni cliniche sopra la Malattia di Addison.) G. Morelli.

143. **Addison's Disease.**—Morelli reports a few cases to sustain his assertions that bronzing is not pathognomonic of any special disease; it may appear isolated. Addison's disease may also occur in persons free from tuberculous infection. Tuberculosis, therefore, is not the only or the inevitable cause of the affection. It even seems possible in some cases that the tuberculosis becomes grafted later as a consequence of the disturbances resulting from the primary insufficiency of the suprarenal capsules. Addison's disease may retrogress and complete recovery follow if the patient has enough rallying powers. On the other hand, the Addison syndrome may develop in the course of the most diverse morbid processes in the abdomen. In one of the cases reported one set of symptoms from suprarenal insufficiency was superposed on another set from climacteric disturbances but all mostly subsided together after the menopause.

Riforma Medica, Naples

December 6, XXV, No. 49, pp. 1345-1372

141 Pyogenic Properties of Bacillus of Malta Fever. (Sul potere piogeno del bacillo melitense.) A. Cantani.
145 Two Cases of Bilateral Tumors in Male Breast. (Tumori bilaterali a tipo familiare in mammelle maschili e sul loro probabile significato.) F. Gangitano.
146 Production of Typical Pain at McBurney's Point in Appendicitis by Indirect Means. (Provocazione indiretta del dolore tipico di MacBurney nelle appendicitI.) L. Pagliori.
147 Intradermal Tuberculin Reaction. (L'intradermoreazione alla tubercolina.) R. Massalongo and A. Calderara.

Hospitalstidende, Copenhagen

November 17, LII, No. 46, pp. 1473-1512

148 *Indications for and Effect of Gastroenterostomy. A. Blad.

148. **Mode of Action and Indications for Gastroenterostomy.**—Blad found that the best results in regard to improved evacuation of the stomach after a gastroenterostomy, in his 20 cases, were obtained when the pylorus had been much obstructed. The improvement in the patient's condition after the operation is not dependent on whether the motor functioning is improved or not. The reflux of pancreatic and intestinal juice through the new opening into the stomach dilutes the excessively acid stomach content and thus renders it less irritating, allowing ulcerations a chance to heal. There is also evidently some reflex inhibiting action on the secretory functioning after the operation. On the other hand, not much benefit need be anticipated from gastroenterostomy in ulcer complicated with gastritis and achylia with a permeable pylorus. In 2 such cases an ulcer in the lesser curvature was accompanied by pronounced achylia but the pylorus was normal; the gastroenterostomy did not improve conditions in the least but rather seemed to aggravate them.

Ugeskrift for Læger, Copenhagen

November 11, LXXI, No. 45, pp. 1227-1252

149 *Tincture of Iodin for Disinfection of the Skin. (Jodtinktur som Huddesinficiens.) A. Pers. Commenced in No. 43.
150 Technic for Making Plaster Casts. (Lidt om Gipsteknik.) E. Nyrop.

November 18, No. 46, pp. 1253-1278

151 Treatment of Delirium Tremens with Veronal. V. F. Møller.

149. **Iodin Disinfection of the Skin.**—Pers joins the chorus of foreign surgeons who are lauding the effects of swabbing with tincture of iodin as the sole means of disinfecting the field of operation, dispensing entirely with scrubbing and washing of any kind. The method was introduced by Grossich, as mentioned in these columns at the time, Dec. 5, 1908, page 2012. Pers has applied this technic in 67 major operations, 29 others and 7 extensive suppurative processes, and has been much impressed with its superiority. He says that it is certainly destined to supplant scrubbing just as the disinfectant spray has been discarded, both macerating the tissues and stirring up the germs, mobilizing them and bringing the deep ones to the surface whence they readily find their way into the wound. The part is swabbed with a 10 or 12 per cent. tincture of iodin applied to the dry skin after it has been dry shaved. The iodin is applied as freely as the usual scrubbing process and over as large an extent. After the anesthetic has been given, the field is swabbed once more with the iodin, and when all is completed the suture is swabbed again. No mishaps were observed by Grossich even when a third of the whole body was swabbed with the iodin. When possible the patient is bathed the day before and puts on fresh linen, but otherwise he applies the iodin to the unwashed wound.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

THE BATTLE OF THE CLUBS. A Reprint of the Reports of the Special Commissioner of the *Lancet* Appointed to Enquire into Medical Aid Societies. Paper. Pp. 230. Price, 1 shilling. London: The *Lancet*, 423 Strand, W. C., 1909.

INFECTIOUS DISEASES. A Practical Text-Book. By Claude Buchanan Ker, M.D., F.R.C.P. Medical Superintendent, City Hospital, Edinburgh. Cloth. Pp. 555, with 66 illustrations. Price, $7. London: Oxford University Press, 1909.

BIBLIOGRAPHY OF TRYPANOSOMIASIS. Embracing original Papers published prior to April, 1909, and References to Works and Papers on Tsetse-Flies, especially *Glossina palpalis*, Rob.-Desv. Compiled by G. A. Thimm, Librarian, Sleeping-Sickness Bureau. Paper. Pp. 288. Price, 4 shillings net. London: Sleeping-Sickness Bureau, Royal Society, Burlington House, W., 1909.

HEART DISEASE, BLOOD-PRESSURE AND THE NAUHEIM-SCHOTT TREATMENT. By Louis Faugeres Bishop, A.M., M.D., Clinical Professor of Heart and Circulatory Diseases, Fordham University. Pp. 284, with illustrations. Third Edition. Cloth. Price, $3. New York: E. B. Treat and Company, 1909.

NERVOUS AND MENTAL DISEASES. Edited by Hugh T. Patrick, M.D., Professor of Neurology in the Chicago Polyclinic and Charles L. Mix, A.M., Professor of Physical Diagnosis in the Northwestern University Medical School. Vol. X of The Practical Medicine Series. Under the General Editorial Charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School. Cloth. Pp. 248, with illustrations. Price, $1.25. Series 1909. Chicago: The Year-Book Publishers.

SKIN AND VENEREAL DISEASES; MISCELLANEOUS TOPICS. Edited by W. L. Baum, M.D., and Harold N. Moyer, M.D. Vol. IX of the Practical Medicine Series. Under the General Editorial Charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School. Cloth. Pp. 240, with illustrations. Price, $1.25. Series 1909. Chicago: The Year-Book Publishers.